

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

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SOUTHEASTERN LIFE INSURANCE COMPANY.

OFFICE OF PRESIDENT.

GREENVILLE, S. C., Sept. 26, 1914.

EDITOR MANUFACTURERS RECORD,
Baltimore, Md.

Dear Sir:

So striking have been the editorials on the cover pages of your recent numbers, and so helpful, that we have decided to send the MANUFACTURERS RECORD for three months to our leading agents throughout the State. The cover page alone is worth more than the cost, to say nothing of the splendid optimism and hard horse sense which runs all through the paper from cover to cover. The following is a list, and we will thank you to enter their names, beginning with your September 24th number, and send bill to us for three months' subscription:

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[This wholly voluntary tribute to the work of the MANUFACTURERS RECORD is much appreciated. It shows that there are some red-blooded corporations ready to co-operate even in these times in advancing the country's welfare. We invite others to join.—Editor MANUFACTURERS RECORD.]

BALTIMORE, OCTOBER 1, 1914

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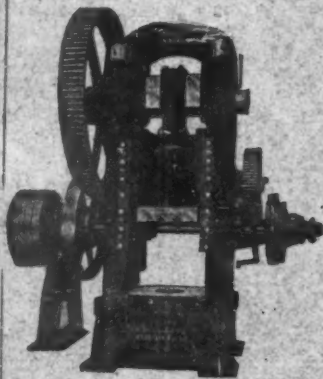


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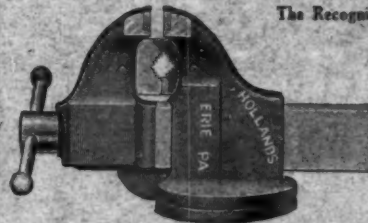
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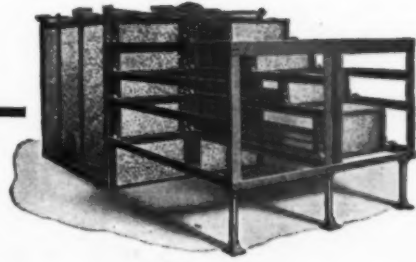
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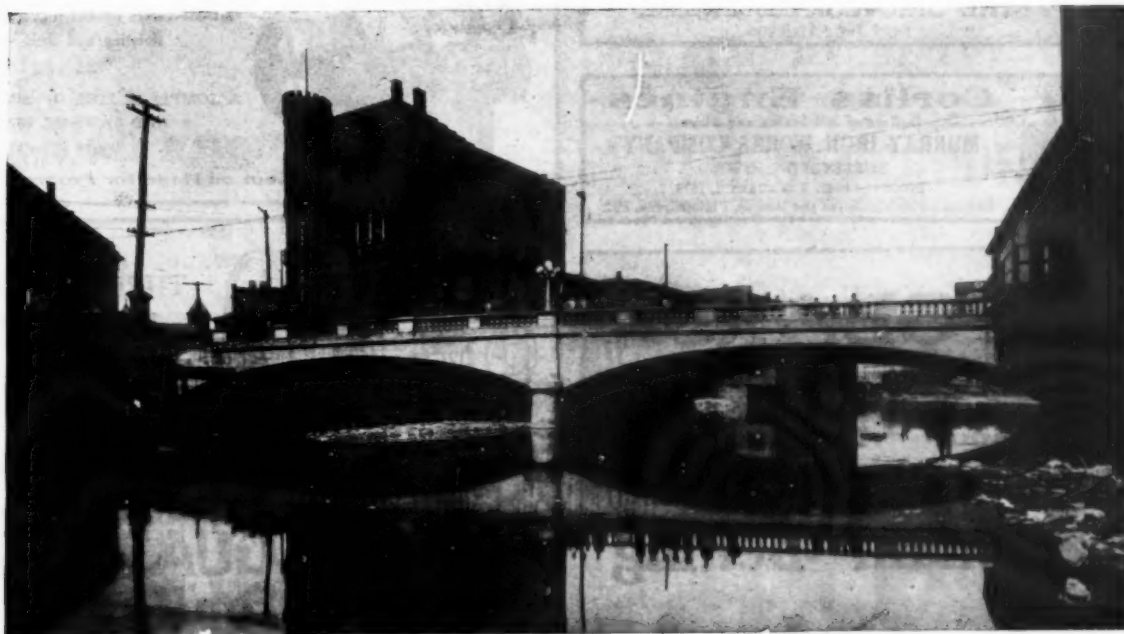
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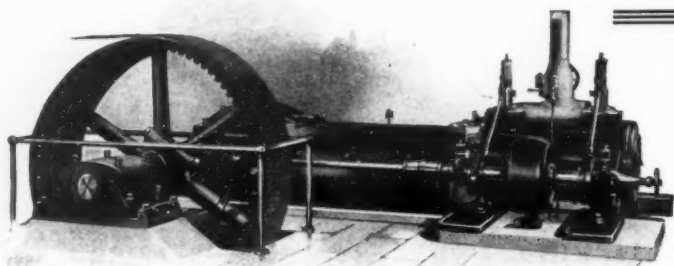


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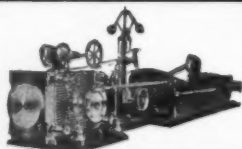
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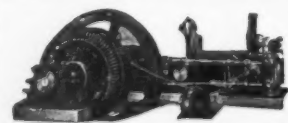
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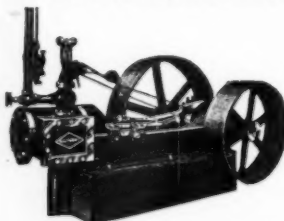
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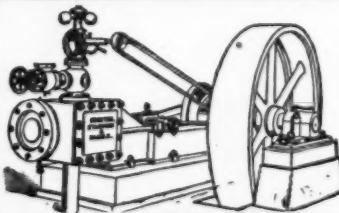
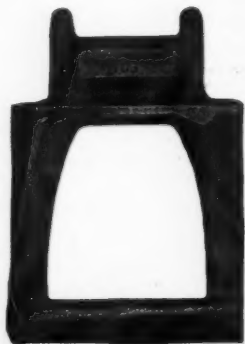
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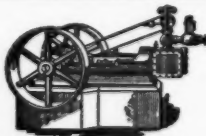


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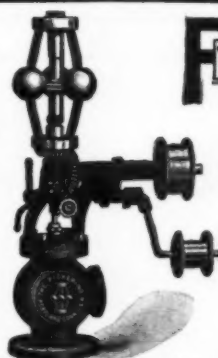
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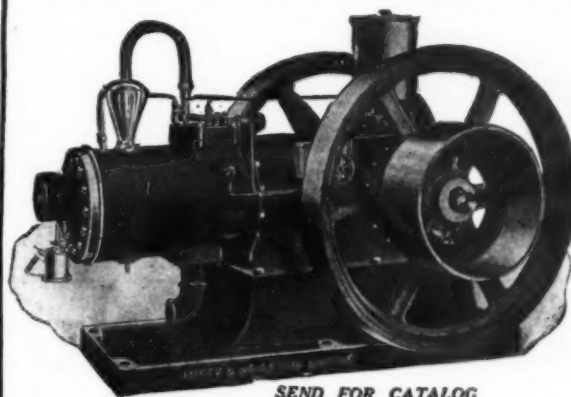
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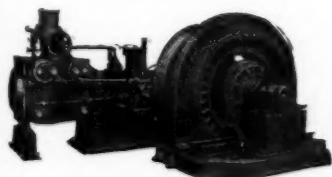
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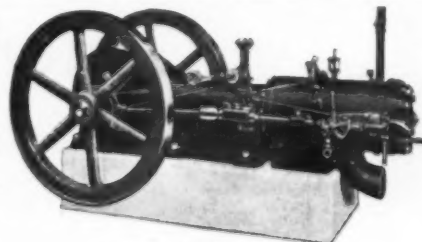
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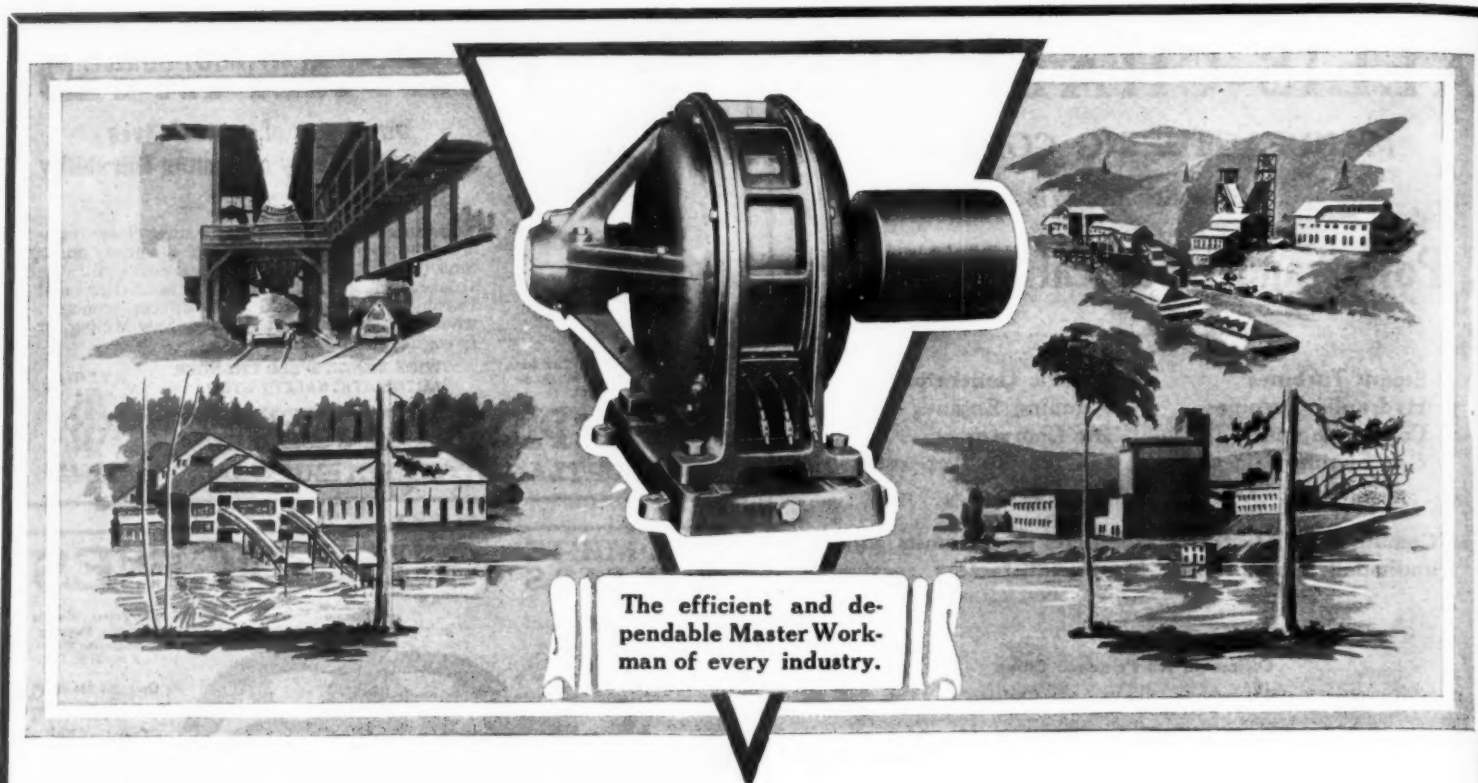
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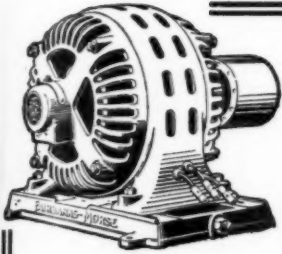


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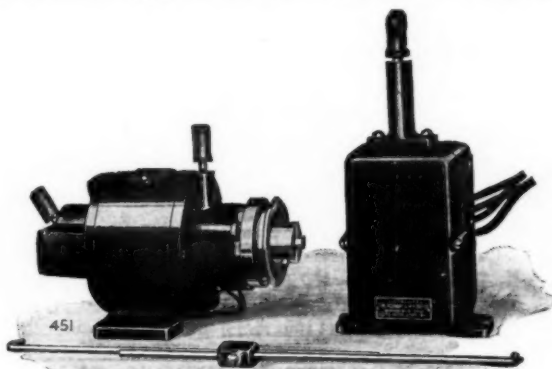
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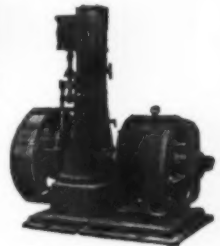
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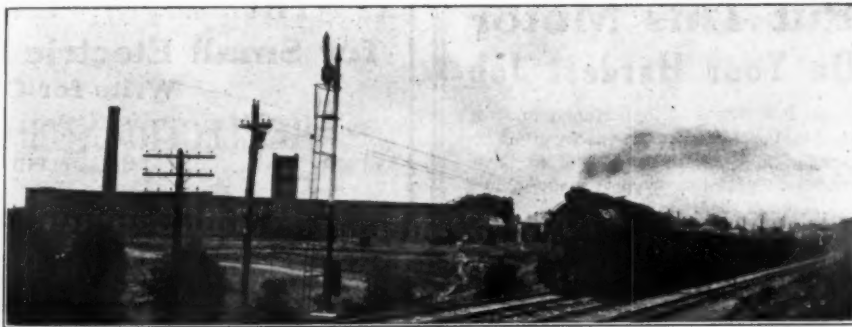
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that gives you such quick steam. The heating surface consists of three rows or banks of horizontally inclined tubes, connected by cross drums, and one vertical bank of tubes in rear of boiler connecting the steam drums with the mud drum.

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THERE'S THE "JOKER"

When your cost sheet shows that your boiler-room is costing too much, look to your fire-brick.

Every time a furnace must be cooled down to repair the fire-brick it means a big drop in efficiency. Loss of efficiency means loss of money.

Fire-brick expense is reduced to a minimum by the use of

J-M High Temperature Cements

Unlike ordinary fire clay, which crumbles under high temperatures, J-M Cements make a strong joint with a smooth surface that will not crack, shrink or run under temperatures up to 3100 degrees Fahr. They protect the edges of the brick, thereby preserving the entire wall against rapid deterioration.

J-M High Temperature Cements not only save money by preventing loss of efficiency, but cut your repair bills in half.

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Get after the fire-brick "Joker" in YOUR plant. Write our nearest branch about your cement troubles.

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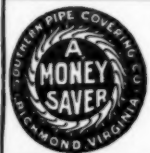
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Made of Asbestos Fibre and other non-conductors easily prepared with water. Not expensive and unsurpassed for non-conducting. Contract work a specialty. Let us explain.

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Stand Pipes, Self-Supporting Stacks, Tanks, Towers, all kinds of Structural and Plate Iron Work, Boiler Fronts, Grate Bars, all kinds of Castings.

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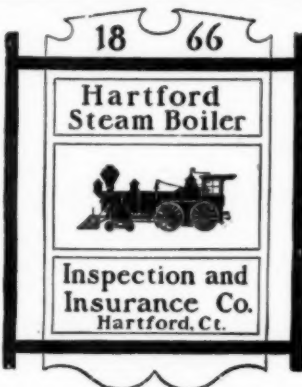
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Insures property against this hazard.

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Makes specifications for new steam plants.

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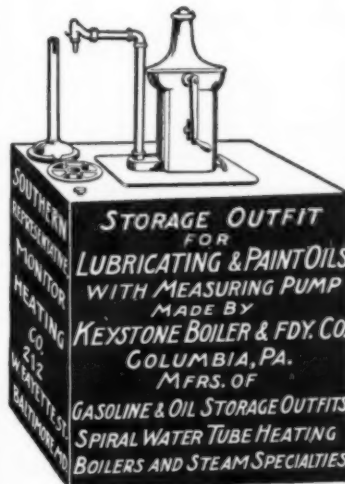
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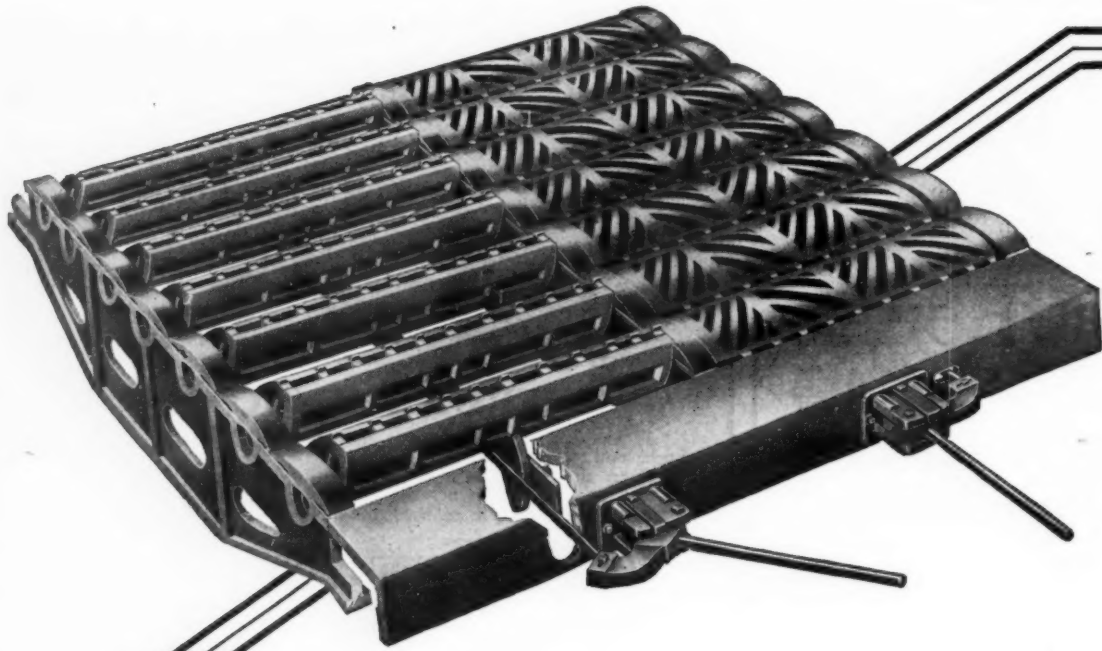
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Lunkenheim line of Cast Steel Valves consists of Globe, Angle, Cross, Gate, Throttle, Non-return Boiler Stop, etc., made in all standard sizes and two combinations as regards the materials used for the trimmings, in order to meet various conditions of pressure and superheat. Also made in "Puddled" Semi-steel.

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A complete description of the entire line can be had by referring to Lunkenheim Catalogue No. 50. Write for a copy.

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Largest Manufacturers of High Grade
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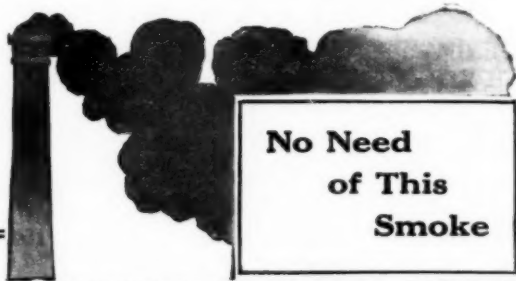
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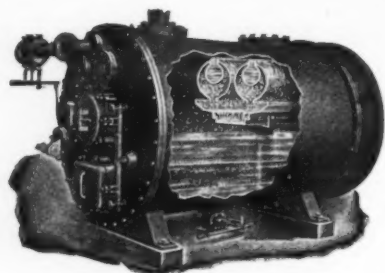
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How Can Any Manufacturer

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NATIONAL DIRECT CONTACT FEED WATER HEATER

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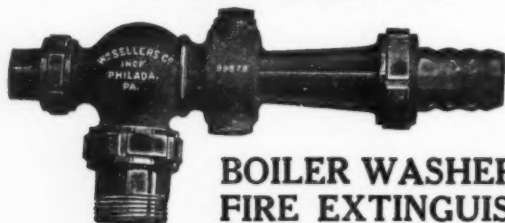
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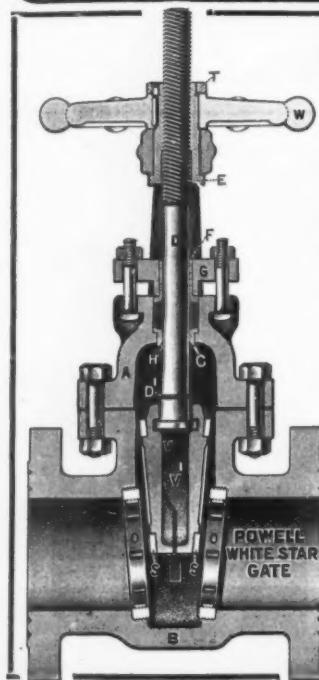
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Five Points of Efficiency Combined in the
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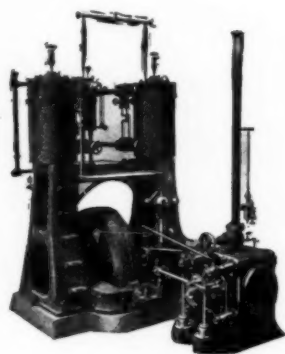
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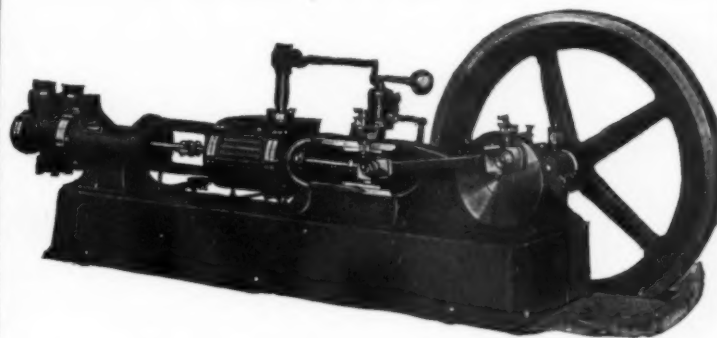
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FILTERS CHICAGO SOFTENERS

Gravity and Pressure Filters

THE NEW YORK CONTINENTAL JEWELL FILTRATION CO.

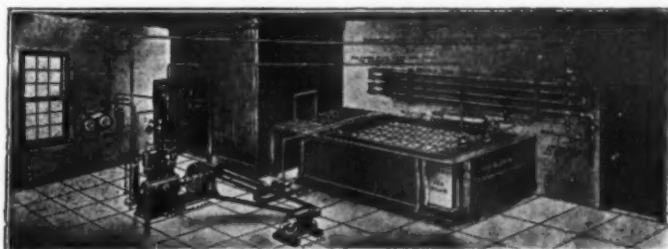
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Many of these machines are in operation in the SOUTH in Mills and other Manufacturing Establishments to supply ICE for local requirements. They can be run from line shaft at small expense, and will soon pay first cost. Machines of any capacity for MAKING ICE or for the COOLING OF COLD STORAGE ROOMS, LIQUIDS OR DRINKING WATER. Over 20 years on the market. Illustrated Catalogue and Reference List upon request.

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DUXBAK Waterproof LEATHER BELTING

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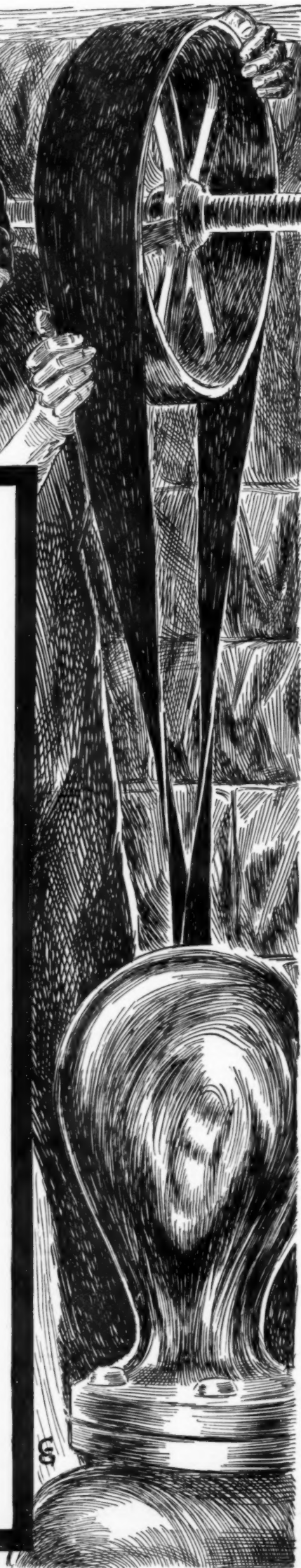
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Six weeks later these looms were "timed."

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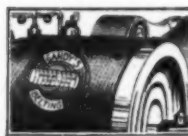
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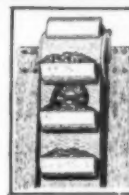
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The most experienced belt users will tell you that there's one best belt for most every separate purpose—that to secure maximum efficiency you must have belting adapted to each condition. If there's any one condition to which

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Letters from Gandy users tell us of years of service from Gandy Belts almost continually soaked with water or oil—three years in use conveying hot sand—ten years of service in the dust and dirt of brick-yards—twenty years as a main drive in constant service, etc.

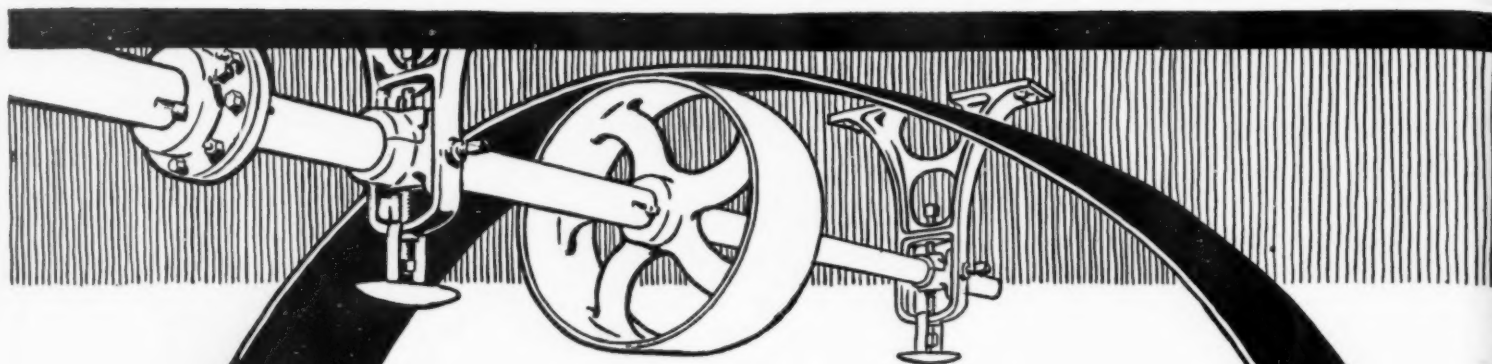
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Tell us what your belt service is and let us send you some facts about Gandy success for the purpose. There's no obligation, so write today.

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Tests of Plymouth Manila Rope

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If you now have a rope drive, you will want this "COLUMBIAN BOOK OF ROPE TRANSMISSION," for it tells in an interesting and understandable way just why and where a rope drive is best. It's a plain-spoken book on rope drive for every practical engineer who is interested in transmission of power.

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*There's Economy in
Rope Transmission*

Both
first cost
and maintenance
are low.

Can be used to
deliver power great distances,
saving long and heavy
lines of shafting; is positive in
delivering of power. Reduces bearing friction.

Rope Transmission is noiseless and is particularly economical and effective for main drives.

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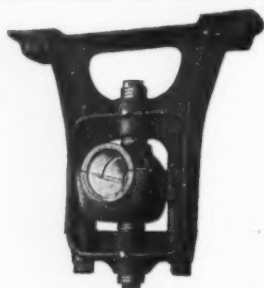
Rope Transmission

has been a specialty with us for years. Rope Drive is exceedingly simple and economical when properly designed, but when not, it means continuous trouble and expense. From years of experience "we know how." Our Engineering Department and years of experience are ever at your service.

*Let us know your proposition—
We have the solution.*

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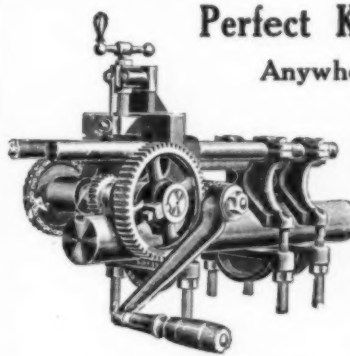
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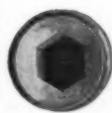
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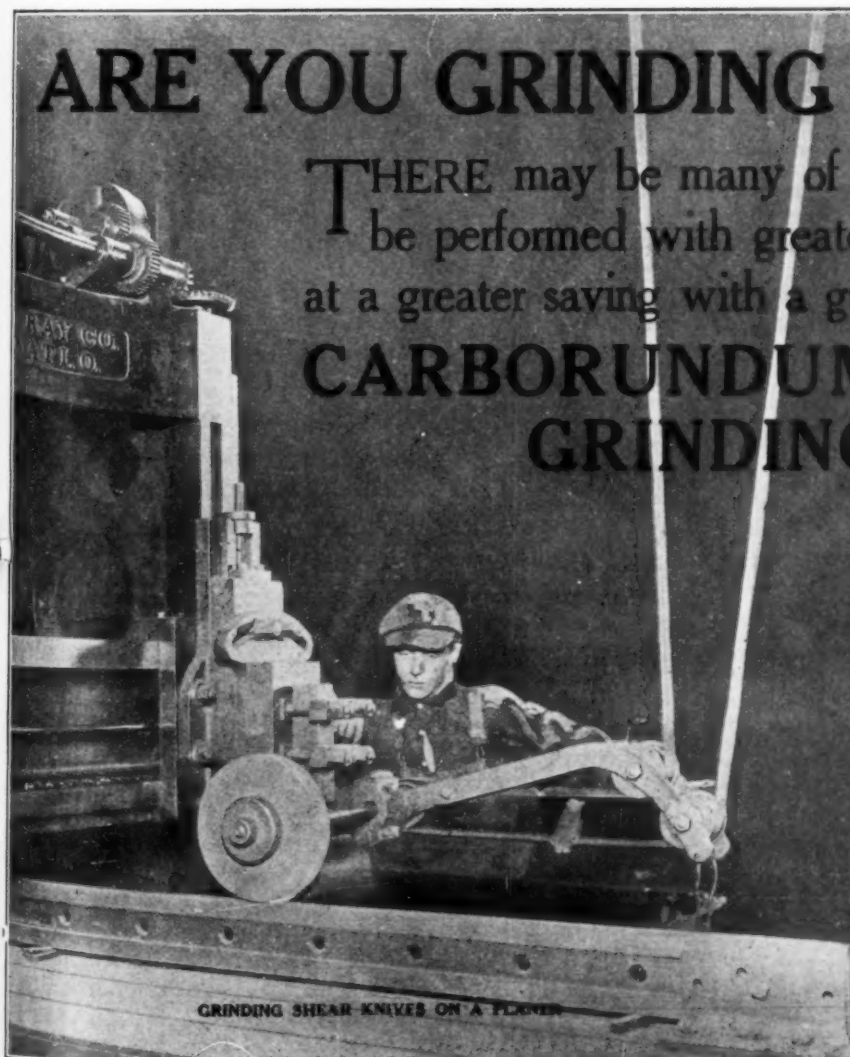
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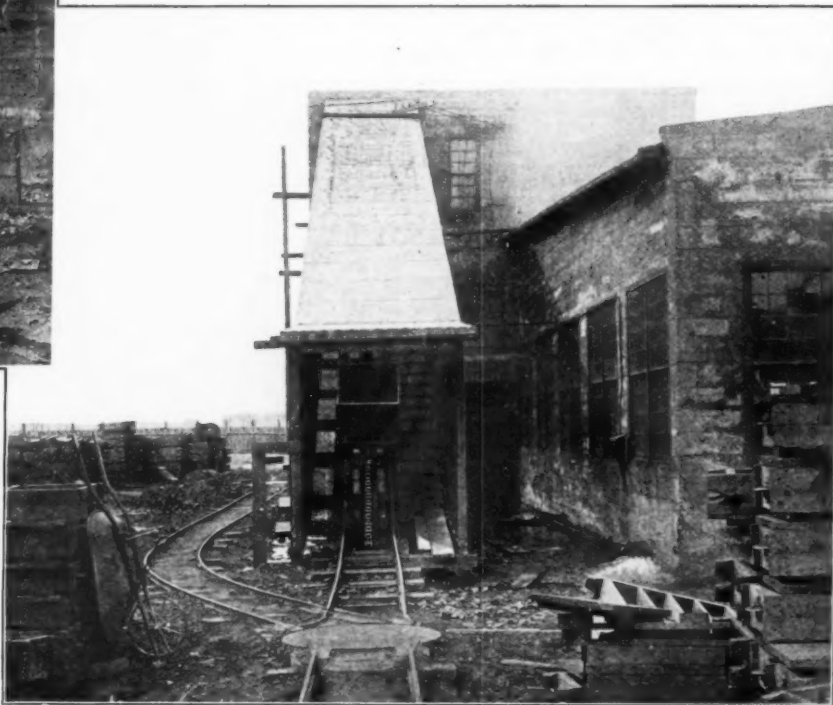
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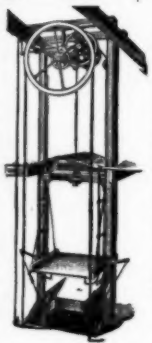
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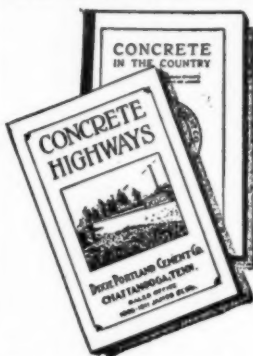


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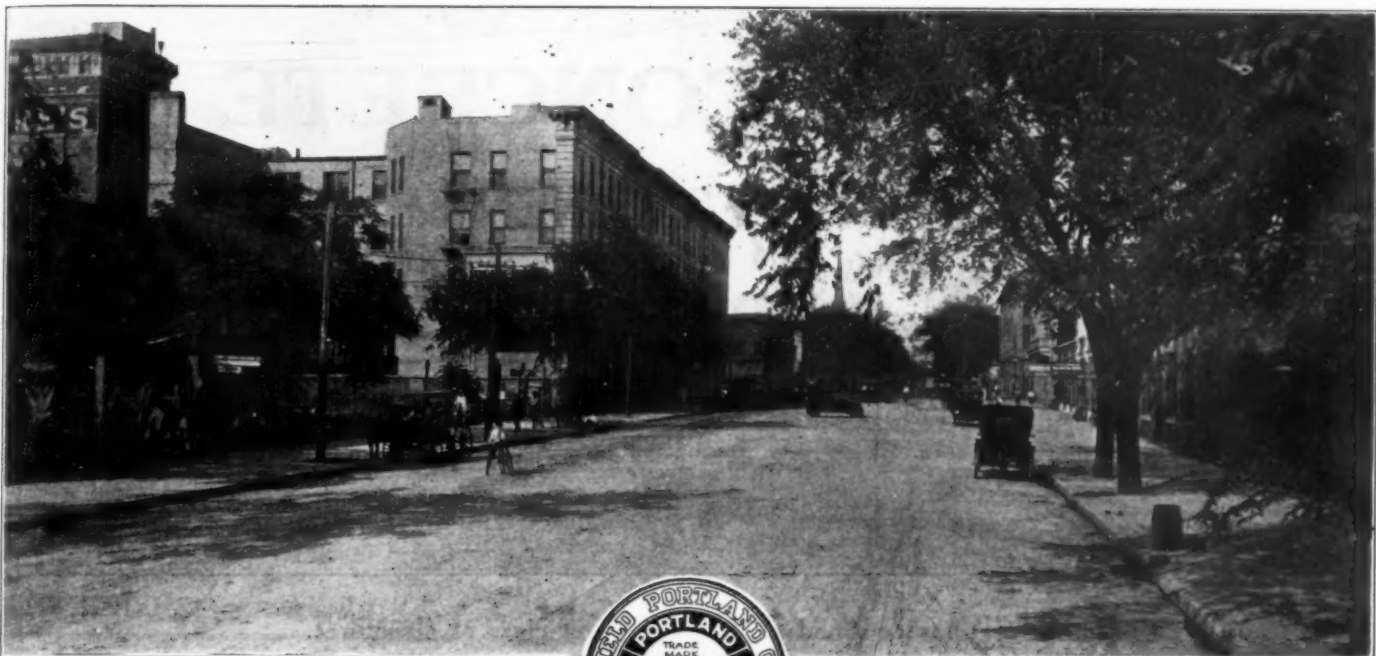
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A Clinchfield Concrete Pavement in Columbia, S. C.

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Concrete for city streets, as well as country roads, is steadily coming into favor, due to the splendid manner in which it stands up under heavy traffic.

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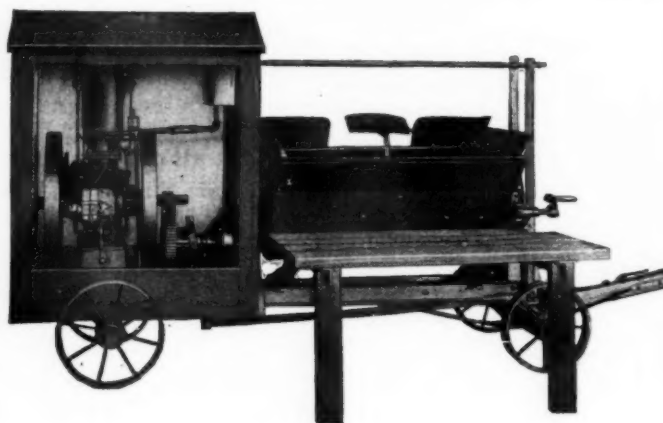
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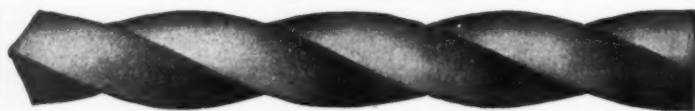
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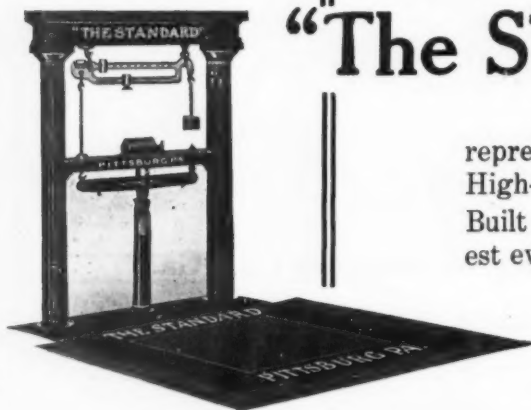
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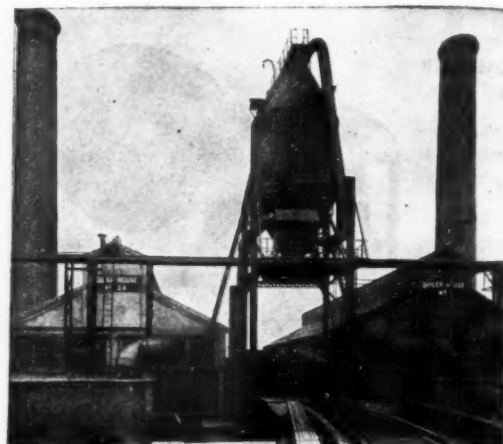
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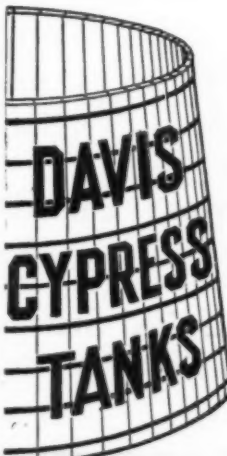


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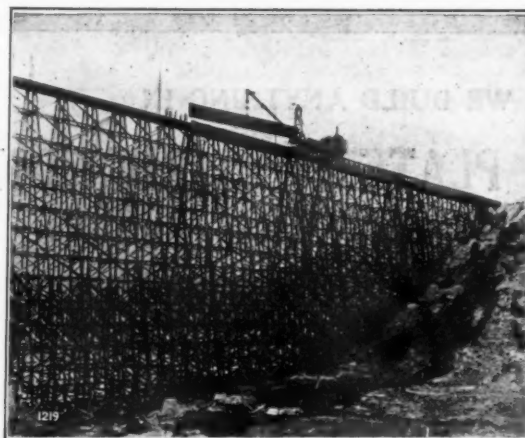
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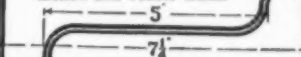
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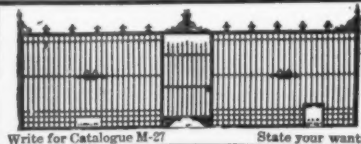
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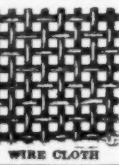
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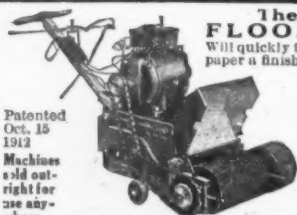
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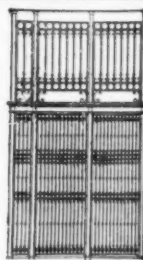
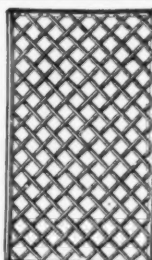
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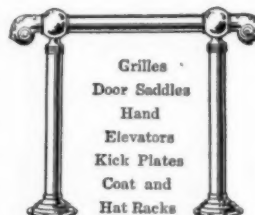
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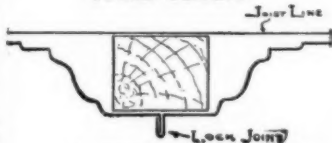
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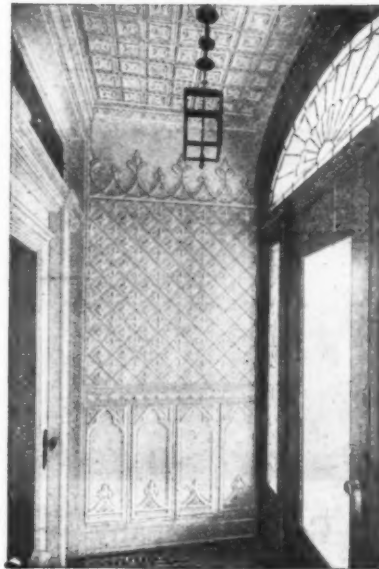
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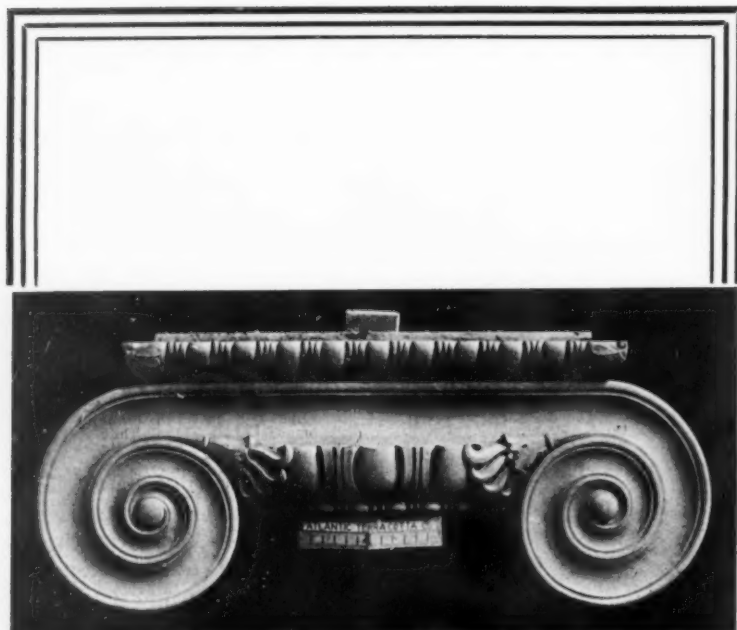
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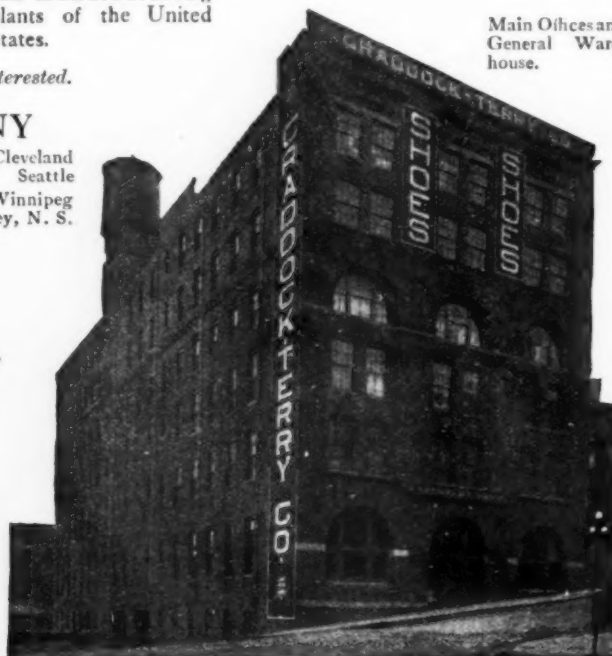
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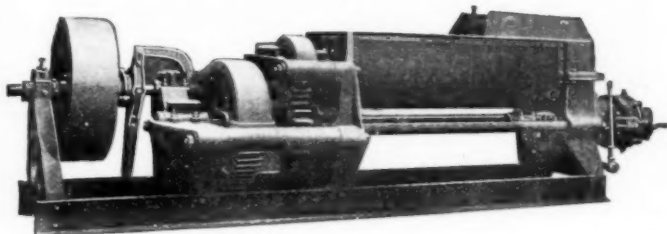
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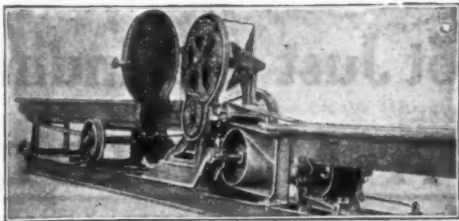
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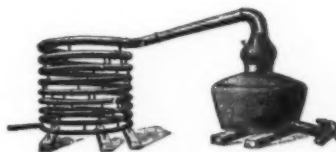
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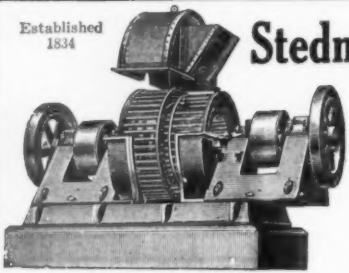
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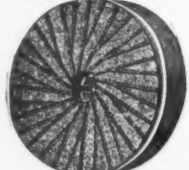
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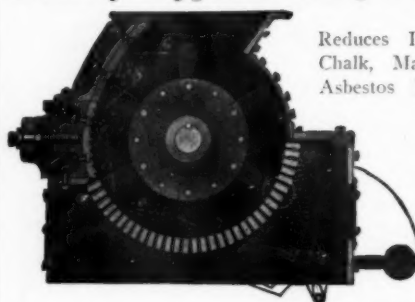
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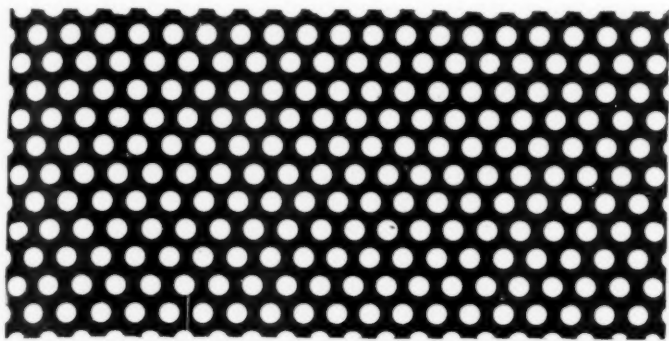
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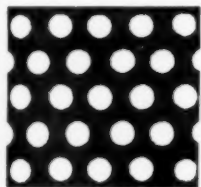
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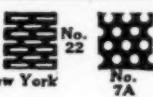
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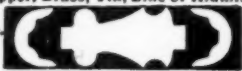


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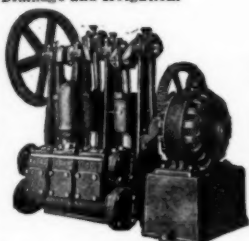
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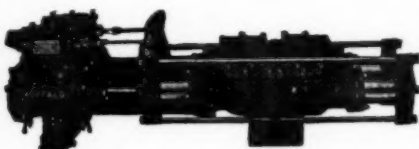
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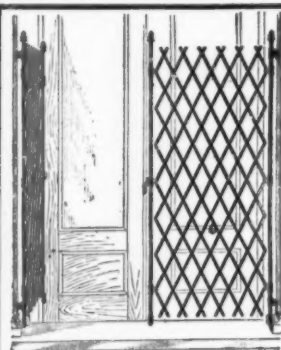
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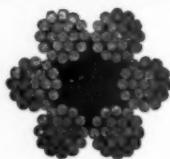
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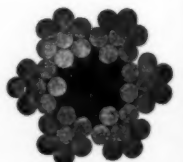


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WEEKLY.

BALTIMORE, OCTOBER 1, 1914.

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ATLANTA MEETING OF THE AMERICAN ROAD CONGRESS.

ON October 22, in advance of the Atlanta meeting of the American Road Congress, a special edition of the MANUFACTURERS RECORD, devoted to good roads and highway improvements generally, will be published.

The improvements of our roads and the betterment of our streets are essential to the broad general prosperity of the country. There can be no important advancement in the material welfare of a community, certainly not the highest, where muddy roads and badly-paved streets are the rule rather than the exception.

For some years this country has been gradually waking up to the importance of highway improvements. We are beginning to learn that the money thus expended, if wisely spent, is an investment which brings manifold profit, not only in material things, but in educational and moral advancement.

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Throughout the entire South efforts ought to be made to induce county officials and municipal authorities generally and leading men of all classes—farmers, merchants and manufacturers—to attend this Congress in order to get the full benefit of its work as a great school of experience brought together for their benefit. Indeed, it would not be possible to plan an educational campaign for this work that would be more instructive and more

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Have you thought that never in the history was there such an awful weight upon so many millions of people, and that never before did the angels of Heaven look down upon so much human suffering, physical and mental, as now?

Have you thought of the millions and millions who in their homes will suffer in deepest poverty, and who this winter will know more of famine and of starvation than the world has ever known before, while husbands and fathers and brothers and sweethearts will day after day be among the killers or the killed?

And as you think of these things, is not your heart so full of gratitude for the blessings enjoyed by you and every man, woman and child who has the privilege of living in this country, that there is no room left in your soul for worrying over the petty things that confront us in business?

Sing a song of joy and gladness—a song of thanksgiving every hour of your life. Make the best of the situation even though you may have many real burdens to carry, and the clouds will pass away ere you know it?

illuminating than the gathering of this Congress, with its splendid exhibits and with the many experts in every line of road and street work.

With a view to encouraging as large an attendance as possible in the general interest of the South, the MANUFACTURERS RECORD is preparing a special road and street improvement edition, a copy of which will be sent, at our expense, to the leading county road engineers and authorities in every county in the South in order to awaken them to the importance of this Congress and to a study of the road question.

In that special issue there will be many important articles which will deal with the financing of road building, with the methods of road making, with the influence of roads upon the life of a community, and others covering various phases of this great question.

So far as the value of that issue is concerned in awakening an interest throughout the whole South in the road question and in the information which it will give in regard to road matters, we believe that it will be one of the most important special editions which we have ever published.

BENEFITS IN INVERSE PROPORTION TO COMMISSIONS.

IT is difficult to understand why the Interstate Commerce Commission wants so much time before reopening the Eastern rate case. But then it is difficult to understand why five men should have the power to absolutely dictate the railroad rates of the country. In no other direction is so much power permitted.—Middendorf, Williams & Co. Financial Circular.

The power vested in the Interstate Commerce Commission is so great that years ago the MANU-

FACTURERS RECORD pointed out its danger and urged that it be lessened instead of being increased. The Interstate Commerce Commission will, we believe, cost this country far greater loss than all the good it will ever do will atone for. This may be rank heresy these days when everything is being turned over to Governmental commissions, but the more commissions we have, the less benefits we will receive.

THE MARKETING OF THIS YEAR'S COTTON CROP.

IT is important that cotton should not be sacrificed, but it is equally as important that cotton growers should realize that they must stand their share of the world's losses and that they cannot hope to get full prices for their staple this year. They have raised what is probably the largest cotton crop ever produced and at a time when the whole business of the world is halted by war.

Cotton growers should understand that when they owe debts it is a matter of honor to sell enough of their cotton to pay these debts, even if they have to sell below the cost of production. In times of stress and business depression thousands of security holders have to sell below the cost to them in order to meet their obligations, and millions of men under such conditions as now exist have to sell their labor at a price below its real value in order to get the best they can, and they feel fortunate in these times in having half a loaf when they cannot get a whole one.

It would be a sad blow to the structure of business life and business integrity of the South if cotton growers should be made to feel that they are to be coddled and nursed to a larger extent than any other class of people. It was not so with the grain growers of the West when wheat sold at 50 cents a bushel and corn at 18 or 20 cents; it was not so in Kansas when droughts practically destroyed the work of a whole year. These people faced the situation with

courage and overcame their losses or pocketed their losses and faced the future with new courage.

Moreover, the only possible way to increase the production of foodstuffs throughout the South and lessen the acreage next year in cotton is by those cotton growers who are dependent upon loans in order to make a crop learning by force of circumstances, by the hard logic of facts, that they cannot go on concentrating upon cotton in the belief that the whole country will again come to their relief. Every effort to reduce cotton acreage by legislation, National or State, is, on its face, so absurd that one wonders at such suggestions being made by public men. Even if it were feasible, it would be inpolitic and uneconomic, for the South should raise a moderate crop of cotton next year. It cannot entirely adjust itself in one year to abandoning cotton without a far greater loss than to raise a moderate crop, even if it should be sold at cost or less, for even then the loss would be less than the loss of complete stoppage. Many an industrial plant has to run at a loss because to shut down would cause a still heavier loss.

The right of a man to cultivate his land and to put it in cotton or in corn as may suit his own fancy cannot be taken from him by legislation, and if it could be done it would result only in disaster. But men can be taught by hard experience that they cannot indefinitely go on borrowing money with which to make a crop. Moreover, landowners who encourage their tenants to raise cotton because they know nothing themselves except cotton, and their name is legion, and merchants who advance supplies on credit against cotton to be planted, and thus practically compel the cotton grower to buy from them his foodstuffs for man and beast at a high price, and the name of such merchants is many legions, must also learn that they are now paying the penalty for the system which they have built up. They have builded on a foundation of sand, and the storm of one bad business season is destroying some of them, though they had had seven or eight years of splendid cotton prices and big profits on which to base a solid foundation.

When the cotton grower who is in debt has sold enough of his cotton to pay his obligations, and that is a matter of common honesty unless his creditors are willing to extend the time of payment, he has a right to store the balance of his crop and hold it just as long as he wants to, regardless of the ups and downs of the market. But with the size of this crop and the world's conditions both taken into view every grower should seriously study the situation and decide whether it would not be wise to sell at least some of his cotton on every fairly active or strong market. If the growers will part with some of their cotton on every good market and withdraw every time the market declines, it will be possible for the South to get rid of a very considerable proportion of the present crop to the ultimate advantage of the grower and all business interests throughout the South. It is wise to bear in mind that this crop, probably the largest and the best that the South has ever produced, cannot be held off the market without ultimately coming on with a rush and breaking it to a point where growers would be at a greater disadvantage than at present.

THE MANUFACTURERS RECORD has for twenty-five years been a persistent advocate of higher prices for cotton. It has recognized the importance of good prices of cotton to every business interest in the South. It has fought every effort to break down the price of cotton, whether by the spinners of Europe or this country or by cotton speculators, but in the light of present world conditions it fully recognizes that though the "Buy-a-Bale" movement has been productive of much good and should be encouraged on a sound business basis and not on a gambling basis, it is not possible for a campaign of this kind to absorb the surplus crop of cotton of this year's production nor permanently maintain the price. Other factors and the law of supply and demand must inevitably have their influence. These facts the cotton planters ought to carefully study.

Every individual grower must, therefore, for himself, in the light of this world situation, decide as to whether he will take the chances of selling at present or of withholding his cotton after he has sold enough to take care of his obligations.

THIS IS THE TIME FOR CONSTRUCTIVE WORK.

IN a letter to the MANUFACTURERS RECORD Mr. F. H. LaBaume, agricultural and industrial agent of the Norfolk & Western Railway Co., Roanoke, Va., says:

I have read with a great deal of interest your circular letter under date of September 10 on the present business situation.

If there ever was an opportune time to do real efficient, constructive work, it is right now, and as president of the National Association of Railway Industrial Agents, known as the Railway Development Association, I am advocating this doctrine and arranging for its further promulgation at the coming meeting in Chicago.

Will you not kindly send me a dozen of those circulars of yours if you can spare them, and I will give them good distribution.

Mr. LaBaume is correct. This is the time to do efficient, constructive work. Now is the time when every man who has in him the inherent qualities that make for success should show the stuff of which he is made. Now is the time for every section that wants to stand before the world as a region of virile, live men to speak out and show its power and strength. No one need for a moment undertake to minimize the conditions under which we are laboring. Europe has the most fearful and unjustifiable war that mankind has ever known. Though we have seen the nations of Europe building along their frontier lines strings of forts, though we have seen them training their men for a final death struggle, though we have seen their energies turned into the building of battleships and the making of cannon and of other instruments of war, it had not seemed possible that in this day of supposed civilization and Christianity that such a condition as now exists could ever be brought about.

The world was walking straight ahead toward the chasm before it, yet believing that the chasm would recede, but instead of that the armies of Europe are in the chasm fighting to kill each other.

No one need minimize these horrors, and yet in this heaven-blessed land, with all its boundless resources, with all its ability to feed and clothe and employ its people, pessimism is out of place. And this can be said with a full realization of every adverse condition that confronts the business interests of the land. Let us "right, about face," and look from the clouds to the sunshine, and kill the little "blue devils" that seem to be sitting on the shoulders of so many men whispering into their ears words of despair.

If Mr. LaBaume can throw into the meeting of the Railway Industrial Agents of the country a spirit of enthusiastic optimism, if he can induce these agents and the officers back of them to go ahead on broader lines for the upbuilding of the sections through which they run, he and those associated with him will do a great work for the betterment of the land.

HOW NOT TO GET FOREIGN TRADE.

THE MANUFACTURERS RECORD is in receipt of a letter from Mr. V. O. de Gaigne of Pozsony, Hungary, which was just one day less than two months on its journey, having been written on July 25 and received September 24. When the letter was written Mr. de Gaigne was evidently not expecting war, for, though he discussed many phases of business conditions in Austria-Hungary and Germany and pointed out how American trade could be developed in those countries, he made no reference to any possibility of war. In his letter he gave some interesting facts in regard to the failure of American manufacturers to comply with the conditions required for selling machinery or other products, and on this point said:

I asked lately a firm of motor launch builders whether a certain launch would run up stream in a current of 24 feet seconds. I got a long reply on all and everything, but nothing on the subject I was interested in. I did not order the launch, because I need it to run up stream to get back to its starting place, and the local office of the customer may lose her patience.

Similar observations I made in company with a large importing house regarding their game of questions and answers. It was simply ridiculous that the manufacturer replied to all and everything, but seldom to the most important part of the letter for which he was written for.

To overcome these errors I think a method of checking the correspondence would serve best. At least, mail going across the ocean should be answered by two men, one after the other, and signed by both if the first party answered all questions fully. Delays amount often to loss of business, and always disappointment.

ELECTRICITY AS RAILROAD MOTIVE POWER.

JOHN F. WALLACE, chairman of the Chicago Railway Terminal Committee, who is a prominent railroad civil engineer and student of transportation matters, says that the day of steam as a motive power for railroads within cities is either gone or is rapidly going, and that the electrification of railroad terminals in Chicago is a necessity. This important declaration will doubtless have a strong effect toward forming opinion leading up to a general extension of terminal use of electric power, which has been found so valuable in the new great railway stations in New York City.

While it is true that the installation of electric plants and equipment is an expensive proposition for the railroads to confront, especially at a time when they are endeavoring to offset decreased earnings by all kinds of economies, it is none the less true that they must realize the need of eliminating the steam locomotive from terminal stations and yards, because railroad business has grown so vast that the smoke and gases around large city depots have attained proportions which are no longer endurable. They constitute a nuisance not only in their immediate neighborhood, but for blocks around, impairing health and depreciating the values of real estate, particularly in residence neighborhoods.

The Baltimore & Ohio Railroad was a pioneer in the terminal use of electricity, having adopted it on the Baltimore Belt Line twenty years ago with primitive overhead equipment which, although serving its purpose, was soon abandoned for the convenient and more reliable third-rail method of serving current. This electric service continues, with several additions to the equipment, and the prompt and expeditious movement of its express trains through the tunnels under Baltimore is a delightful and clean surprise to travelers, for it is not necessary to close car windows, because the air in the tunnels is kept pure and the electric lamps strung along the walls make the way bright and cheerful, in pleasant contrast to the dark and dingy and gas-befouled tunnel which is still used by the Pennsylvania Railroad through Baltimore.

Considerations of economy will probably compel railroads for many years to use steam for motive power on road engines. Its comparative cheapness and flexibility commend it, although there are indications here and there that the time is coming when the landscapes will no longer be smeared with masses of carbon in atmospheric suspension, and trains will speed along on all railroads as they are now doing on interurban electric lines, cleanly and almost noiselessly, to the satisfaction of their patrons as well as to those who live adjacent to the railroads. Hydro-electric stations will produce current cheaply and in ample quantity, and they will be sufficiently frequent to provide electricity for the railroads with little loss in transmission.

In this connection it is interesting to consider the advance in the use of oil-burning steam locomotives. A decrease in the price of fuel oil has caused one of the large railroads in the Southwest to resume the use of petroleum on its engines, now that it is assured of a liberal supply of the fuel, and other lines are preparing, it is said, to imitate this example. The advantages of a fuel which gives little smoke and no ash are so great that a considerable increase in its use is to be anticipated, providing that a low price and an ample supply are made permanent.

Notwithstanding these facts, signs point to electricity as the power for the railroads of the future. With increasing care as to forest conservation, which will incline to assure a steady supply of water in our streams, the establishment of more and more hydro-electric power plants will ensue, and reliable sources of energy will consequently induce the extended use of the silent force as a means of driving railroad trains.

CAN THE WAR LAST, AND HOW MANY ARE BEING KILLED?

AT the time of the Civil War the South's population was about 10,000,000 out of a total in the country of 30,000,000. Of these 10,000,000 approximately 6,000,000 were whites and 4,000,000 blacks. At the beginning of the war the South was without a navy or an army, without organized government, without any monetary system and without any method for raising money by taxation or otherwise. A government had to be created, a system of taxation established, an army had to be raised and equipped, and some method had to be devised for organizing the finances of a government whose ports were all blockaded and which, therefore, had no means of exporting its chief product—cotton.

On the other hand, the North had an established government, an army and a navy, its ports were open to the world, it had vast manufacturing interests and all the other advantages of a completely organized system of government as compared with the difficulty of creating a new government. It had three and one-third times as many white people as the South. It, therefore, had three and one-third times as large resources to draw upon for its fighting men. Its advantages in other respects were even greater than the three and one-third times the difference of white population.

Notwithstanding this disparity, the South maintained its fight for four years.

How long can Germany and Austria, if they are driven back from France, maintain themselves against Russia, England, France and Belgium? The allies cannot bring against Germany and Austria from their European possessions any such preponderating number of population as the United States was able to bring against the South. They cannot bring so great an advantage against Germany and Austria in wealth, in commerce and in a navy as that which the North had in comparison with the South.

These facts are mentioned not with a view to raising any question as to the struggle made by the South, but as a side light on whether Germany and Austria could, if they were invaded, maintain relatively such a struggle as that which the South maintained for four years, and, if so, what would be its world effect. It has been repeatedly said that it would not be possible to finance a long war, but the South, without money, except that turned out by its printing presses, succeeded in financing a war for four years, and when a nation is struggling for what it believes to be its very existence its people can keep on fighting for a long time beyond the period at which bankers from their viewpoint would think it possible.

If, on the other hand, Germany and Austria should for a time prove to be winners, it is not conceivable that they could invade Russia, England, France and Belgium to the point where these countries would be compelled to submit, certainly without years of fighting.

How many men are being killed and wounded? Far more, we believe, than the numbers reported. At the battle of Gettysburg about 180,000 men were engaged in a three-day fight. They used the old muzzle-loading musket in which the powder had to be rammed home, and then the ball on top of that, and then the ramrod put in place, and then a cap put on. After all of this work only one shot was available, and then the same process must be repeated again and again, until one wonders how it was possible to kill as many men in a battle as were killed in the days of the Civil War. The cannon of those days, like the muskets and rifles, were muzzle-loading and had to be carefully swabbed out after every shot was fired. In this three-day fight there were reported of killed, wounded or missing 43,000, or nearly 25 per cent. of the number engaged.

In Europe repeating rifles enable the soldier to shoot eight or ten times almost as rapidly as the trigger can be pulled; machine guns send forth on their death mission 600 or more shots a minute, and the modern breech-loading cannon, with their awful power, can shoot probably a dozen or more times to every shot fired by the old muzzle-loading gun of Gettysburg days. Indeed, the power of killing by these modern methods of human ingenuity is so stag-

gering that one marvels that any army can live in such a contest or that any man escapes death.

Under these conditions, as contrasted with those at Gettysburg, probably 3,000,000 men have been daily battling for six or seven weeks in Belgium and France, and as many more in Austria and Poland. If in a three-day fight with the old muzzle-loading guns 25 per cent. of the soldiers engaged were killed or wounded, who can possibly estimate the number killed and wounded in this awful contest in which 6,000,000 or more men have been struggling with terrific force every day for six or seven weeks, using the most death-dealing inventions that man's ingenuity has ever devised for killing his fellow-man?

It is hardly possible to believe that in these six or seven weeks of contest the proportion of killed and wounded has not been more than double that of the number killed and wounded in a three-day fight at Gettysburg, and Gettysburg did not show the largest proportion of killed and wounded during the Civil War. But such a death rate would indeed "stagger humanity." Have 50 per cent. of the men engaged in these battles been killed or wounded? or even 25 per cent., and it seems impossible to believe that as small a proportion as 25 per cent. have been numbered among the dead or wounded. But if 25 per cent. only, the number would be over 1,500,000 if reports are at all correct that 6,000,000 men in the aggregate are actively engaged in the fighting. We believe that the number killed and wounded must have exceeded this, as we cannot believe it possible that with such terrific methods of slaughter available the percentage is not far greater in a six or seven weeks' fight than the percentage in a three-day fight at Gettysburg.

Thus the awful toll of death in war, of which we are hearing but little yet, for it is doubtless the policy of all the governments engaged to suppress this news as far as possible, must be so fearful that humanity will indeed stagger beneath the load which it must bear if civilization itself is to continue in Europe through a war so destructive relatively for such a length of time as that which the South endured between 1861 and 1865.

The people of this day, who were not familiar with the conditions existing in the South at that time nor with the utter destruction of that section and the awful poverty that prevailed afterwards, can possibly in such a comparison as this have a better understanding of the struggle which the South made and of what it meant in the destruction of wealth and manhood and of the halting which it forced upon that section for nearly half a century. How tremendous will be the penalty which Europe must pay for this war can to some extent be measured by studying the losses of the South not only during the war, but during the reign of poverty which prevailed for many years after the war. Suppose Europe's war should continue to an utter exhaustion such as that endured by the South. Can any country of Europe fight to an end so bitter and at a cost so stupendous?

Well may we be thankful that we live in the United States, with all its limitless potentialities.

MAKE READY FOR WINTER TOURISTS.

IN considering the possibilities of increasing tourist business to the South this winter, it should be borne in mind that, while California will be an aggressive competitor this year, it will be still more aggressive next year. The Panama Exposition will in itself next year be a great drawing card, carrying to California thousands of people who would otherwise go to the South. It becomes essentially important, therefore, that the South should make as big an effort as possible for the tourist business this winter. Next year California will have a great advantage in this competition, but this year the South has the call on the situation, and if it will go after it vigorously enough, it can capture the business.

Railroads, tourist resorts, hotels and everyone else interested in increasing the tourist business to the South should begin early and work late in this campaign.

Every piece of road work that can be completed in the tourist section of the South should be finished as quickly as possible in order to let it be widely known that motorists can make trips in

comfort. There are many fine stretches of good motor roads in the Carolinas and Georgia and Florida and in other Southern States, but most of these roads are connected by some abominably bad roads which offset all of the good roads. These bad stretches ought to be taken hold of immediately and improved as much as possible during the early fall.

Florida, for instance, contains long stretches of fine motor roads separated, instead of connected, by a comparatively few miles of abominably bad roads. These bad stretches could be greatly improved by a small expenditure while waiting for permanent improvements. Similar conditions exist in Virginia and the Carolinas and Georgia, and work such as suggested for Florida should be done in all of these States.

It is worse than folly to announce to the public that there are good through motor roads from Washington or from other points in the East or West to the South until these bad stretches have been bettered.

The improvement of these bad roads so as to make a continuous line of good roads is one way in which the South can help itself in developing the tourist business.

The motorist who goes South this winter and has to put up with some of these bad stretches of road, and next year goes to California and travels over the continuously good lines of splendid roads in that State, will have an unfavorable opinion of the South in contrast with a favorable one of California. Let the South, therefore, be active and immediate in its work of connecting up its good-roads system, and let the railroads and resort towns and cities be active in their campaign for bringing winter visitors to this section this winter, for next winter California will make a great fight against the South on tourist travel.

All that is achieved this winter will help to strengthen the South's position in the competition which it will have next winter.

TALK LESS, DO MORE.

THOMAS A. EDISON, in a letter to the Iron Age, gives an illustration of the way in which business men can meet the emergency due to the lack of foreign raw materials in manufacturing work, stating that carbolic acid is not made in this country, and that he, as the largest single user of it here, found himself in a very tight place; but by massing a big gang of men in three shifts he erected the machinery and apparatus for making phenol synthetically from benzol, and that his plant is now working, but that he will use for his own purposes all of his product. He adds:

It occurs to me that there are many things which we are short of in the chemical line which could be made here quickly if some people in the trade would act—not talk.

Mr. Edison has had a habit of learning how to do the things that need to be done and of putting into the making of them the initiative and energy necessary. Many others could follow his example to advantage.

ADJUSTING TO CONDITIONS.

A DISPATCH from Summerville, Tex., says that the creosoting plant at that point, which has been closed down since the foreign war on account of the inability to get foreign creosote, will resume operations immediately, using zinc chloride instead of creosote. This is in line with the suggestion made made in the MANUFACTURERS RECORD last week by Mr. Clyde H. Teesdale, in charge of wood preservation of the National Department of Agriculture, Madison, Wis., in which zinc chloride is mentioned as a feasible substitute for creosote.

Southern Industrial Activities.

Since January 1 the Construction Department of the MANUFACTURERS RECORD has published 47,400 brief and concise statements relating to all lines of industrial and building operations, financial enterprises, railroad

construction and various general business interests in the South and Southwest. Of this number, the items published before September were detailed, under appropriate headings, in previous monthly synopses. Those published during September number 4004, and are shown in the following table, which also gives the totals of such items for nine months of this year:

	September.	Totals for 9 months, January to October.
Industrial and Developmental.		
Bridges, Culverts, Viaducts.....	87	865
Canning and Packing Plants.....	23	212
Clayworking Plants.....	13	138
Coal Mines and Coke Ovens.....	24	314
Concrete and Cement Plants.....	6	47
Cotton Compresses and Gins.....	25	309
Cottonseed-oil Mills.....	12	144
Drainage Systems.....	23	215
Electric Plants.....	97	1,021
Fertilizer Factories.....	11	131
Flour, Feed and Meal Mills.....	26	231
Foundry and Machine Plants.....	33	340
Gas and Oil Enterprises.....	45	1,192
Ice and Cold-storage Plants.....	34	465
Iron and Steel Plants.....	8	19
Irrigation Systems.....	5	38
Land Developments.....	37	677
Lumber Manufacturing.....	49	620
Metal-working Plants.....	7	67
Mining.....	32	339
Miscellaneous Construction.....	63	495
Miscellaneous Enterprises.....	92	1,027
Miscellaneous Factories.....	149	1,658
Motors and Garages.....	55	397
Railway Shops, Terminals, Roundhouses, etc.....	10	79
Road and Street Work.....	232	2,344
Sewer Construction.....	91	864
Telephone Systems.....	14	244
Textile Mills.....	23	303
Water-power Developments.....	13	129
Water-works.....	103	1,051
Woodworking Plants.....	28	423
Buildings.		
Apartment-houses.....	64	1,232
Association and Fraternal.....	31	409
Bank and Office.....	43	580
Churches.....	83	1,140
City and County.....	54	718
Courthouses.....	29	211
Dwellings.....	336	4,656
Government and State.....	36	418
Hotels.....	40	565
Miscellaneous.....	67	831
Railway Stations, Sheds, etc.....	22	289
Schools.....	201	2,400
Stores.....	157	2,426
Theaters.....	35	367
Warehouses.....	247	786
Railroad Construction.		
Railways.....	79	1,026
Street Railways.....	8	226
Financial.		
Corporations.....	122	1,264
New Securities.....	284	3,934
Fire Damage, etc.....	3,383	40,236
Machinery, Proposals and Supplies Wanted.....	165	1,763
	456	5,401
Totals.....	4,004	47,400

To Help Miami's Trade.

The City Hall,
Miami, Fla., September 23.

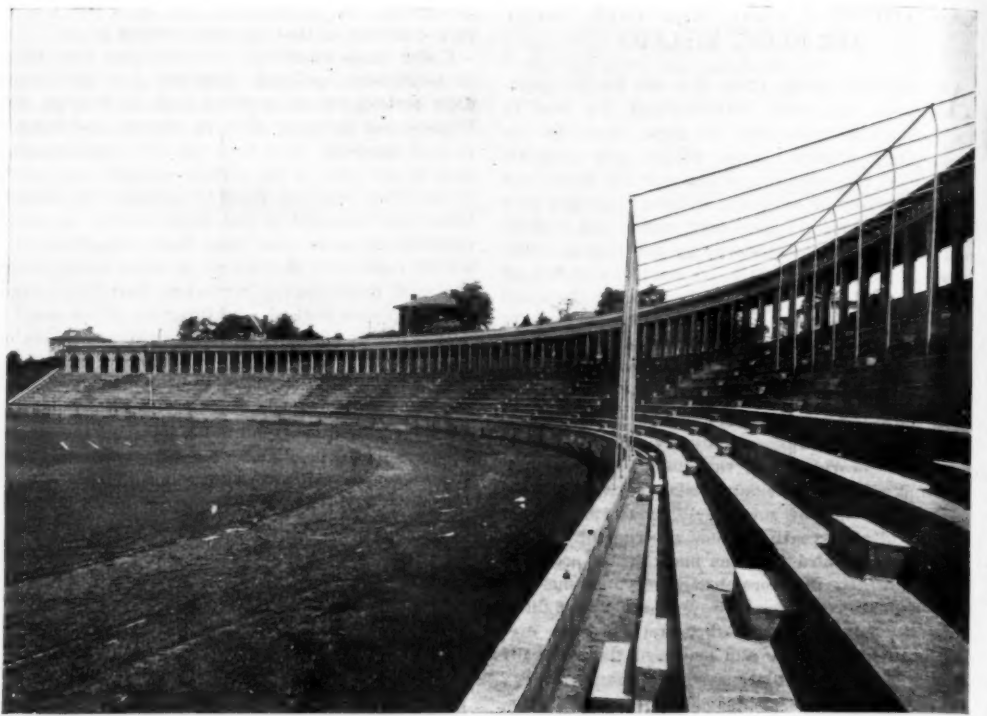
Editor Manufacturers Record:

The United States Congress in 1912 passed a bill appropriating \$390,000 to put 20 feet of water through the channel from Biscayne Bay out into the Atlantic Ocean, conditioned upon the city of Miami owning its public docks and connecting with this channel. The city has purchased the land on which to build the docks, and the Isham Randolph Company, engineer of Chicago, Ill., is now preparing the plans and specifications for the same.

The Government believing that the citizens of Miami are in earnest and will comply with the requirements of the bill, will, in my judgment, begin this work within the next 10 days or two weeks.

When we get 20 feet of water from the ocean to our docks a great many of the vessels that now pass by Miami will readily call at our port, bringing freight from New York and taking our fruit and vegetables back. This, we believe, will very materially reduce freight charges, as rates on the same will then be based upon water rates. When this improvement is accomplished, and I think it will be finished within the next 12 months, Miami will undoubtedly soon double its population. We now have between 20,000 and 25,000 people.

J. W. WATSON, Mayor.



THE \$30,000 CONCRETE STADIUM AT THE UNIVERSITY OF VIRGINIA.

A \$30,000 Concrete Stadium Completed.

The University of Virginia at University, near Charlottesville, has completed its concrete stadium, of which a view is presented herewith. This stadium, 800 feet long, is laid out in the form of a quarter circle, with straight extensions beyond the circular portion at both ends. The amphitheater of seats rests directly on a great hillside, which was excavated and banked to receive the structure. At the top of this amphitheater, behind the last row of seats, is a circular colonnade terminating in end pavilions, which are closed in and are used as shelters for athletes during the rest period. The radius of the colonnade at the rear of the stadium is about 265 feet, and the length on this arc is about 536 feet. Concrete construction resting on natural earth was followed, but heavily reinforced and tied together to avoid possible settlement. Its finished surface is to be hammered, and will resemble the Roman travertine stone when finally completed. The colonnade has dark columns similarly treated, with frame construction above the column and roof of red tile. The stadium was built by Dr. Wm. S. Lambeth, superintendent of grounds and buildings, who let all subcontracts, but executed the concrete work by the university force. Its cost was \$30,000, exclusive of the work on the athletic field itself, and the seating capacity is 4800. Ferguson, Calrow & Taylor of Norfolk were the architects of the structure. For mixing concrete Dr. Lambeth used the Old Dominion Portland cement manufactured by the Virginia Portland Cement Co. of Fordwick, Va., and sold by the Wm. G. Hartranft Cement Co. of Philadelphia.

Progress at Asheville.

Board of Trade,
Asheville, N. C., September 26.

Editor Manufacturers Record:

The Asheville Telegraph & Telephone Co. has begun work on addition to its plant, at a total cost of \$30,000, consisting of overhead and underground cables and additional switchboard facilities for 600 telephones. One aerial cable of four miles in length will be put up and will take the place of many of the present open wires.

The Sisters of Mercy are receiving bids for a one-hundred-thousand-dollar hospital, to be erected on their grounds where the present St. Joseph's Hospital is located. The hospital is to be of stone, brick and reinforced concrete, and will be fireproof and modern in every particular. The plans were drawn by Messrs. Smith & Carrier of Asheville.

The management of St. Genevieve's College has just announced their intention of constructing the north wing of a fireproof building for this school, work to begin within the next few weeks. The total estimated expenditure will be about \$60,000.

The American Feed & Milling Co., composed of local citizens, is establishing a plant here which will cost in the neighborhood of \$7000, the machinery and equipment costing about \$10,000. This plant is expected to be in operation within the next 60 days.

The French Board Manufacturing Co., which has been producing 550,000 white quilts a year for the past three and one-half years, has announced its intention of increasing its plant, more than doubling its present capacity and adding a spinning mill in connection with the manufacture of quilts. The additions to this plant will entail an expenditure of more than \$250,000.

N. BUCKNER, Secretary.

Foreign Trade at Charleston.

Activities at Charleston, S. C., looking to an expansion in the facilities for handling foreign trade at that port emphasize some figures showing advance on that line to which A. V. Snell, managing secretary of the Chamber of Commerce of that city, has called attention. In the rearrangement and redesignation of customs districts which went into effect July 1, 1913, the district of South Carolina includes Charleston, Beaufort and Georgetown. In the past fiscal year there were no exports from the last two mentioned ports, and the value of the exports at Charleston show an increase over the preceding fiscal year of more than \$7,000,000. The following table shows the changes in the values of exports and imports in the years 1904-1914, inclusive:

Years.	Exports.	Imports.
1904.....	\$2,486,216	\$1,828,068
1905.....	3,468,492	2,478,156
1906.....	760,872	2,751,482
1907.....	1,082,466	3,528,553
1908.....	2,508,068	3,375,997
1909.....	4,044,237	3,630,796
1910.....	8,104,821	5,228,653
1911.....	8,965,119	6,216,573
1912.....	12,887,724	5,024,674
1913.....	13,511,858	4,774,258
1914.....	20,829,591	5,343,866

There were variations between 1904 and 1908 in the value of exports, but in the latter year began a return to earlier conditions, and since then there has been such steady increase in the value of exports that, in spite of variations in the value of imports, the total foreign commerce in the district in 1914, amounting to \$26,173,457, was an increase of 506.7 per cent. over that of 1904.

The Commercial Club of Marianna, Ark., O. G. Norment, secretary, is circulating a booklet presenting a number of important facts about the cotton crop of this year.

Suggested Government Aid In Handling Cotton

By A. S. TERRILL, Chairman, United States Lumber & Cotton Co., Chicago.

Unless the planters secure speedy financial assistance, the South will suffer irreparable loss, but if they can be assisted to carry the crop until the end of the war, or until conditions materially improve, they will realize good remunerative prices.

For the past 12 years I have been interested in large cotton planting operations, and during that period have spent much of my time in the South.

My business affairs also have required my presence at our English office at intervals, for extended periods of time, upon matters connected with the cotton industry, and I have just returned from a six months' stay abroad, consequently I have been in close touch with the cotton spinners of Europe, and have for several years attended many of the meetings of the International Federation of Master Cotton Spinners and Manufacturers' Associations as a guest of honor from the United States. As such I had the pleasure of being the sole guest of honor at the meeting of their executive committee, received by President Poincaré in Paris last June.

As a result of my connection with the industry, and my close association, both with the growers of the raw product and large manufacturers of the finished goods in Europe and America, I have had unusual opportunities for studying the industry from all points of view, and thoroughly familiarizing myself with all its different phases and ramifications.

Ever since my first connection with cotton planting I have watched with keen interest the unceasing efforts of the people of the South to develop their country, exploit its natural resources and add to its material prosperity. I have had some small part in this work myself. I believe through my efforts some \$30,000,000 of foreign and Northern capital has been invested in Southern enterprises.

At the close of the war of the sixties the South found itself with its credit seriously impaired, verging on the stage of bankruptcy, and drained of money and men. Since then its people have been engaged in a tremendous struggle for economic success and the creation of a prosperous agricultural and industrial section. In their undertakings they have labored under great handicaps. In recent years their efforts have been commencing to bear fruit, and they have beheld the dawn of a new era of prosperity. Now the blight of war has fallen upon them and the sanguinary struggle in Europe has deprived them temporarily of a foreign market for their cotton—America's greatest export crop.

According to the United States Census Bureau's report, the South produced in 1913, 14,315,015 bales of cotton, which, together with the cottonseed, was valued at over a billion dollars. Some conception of the gigantic size of the crop is gained when it is noted that its value exceeded the world's output of gold and silver for the year 1913 by \$400,000,000. Of the total crop, only 42 per cent. was consumed by home manufacturers, the remainder having been exported to Europe, England taking more than any other country. The cotton crop of this year will be fully as large, in all probability larger than that of last year. As a result of the European war, with its consequent business stagnation and paralysis of industry, the European manufacturers will be unable to consume that quantity of cotton this year, thus depriving the Southern planters of a market for about 58 per cent. of their crop. This situation is, however, but temporary, and will last only while the war is in progress. As soon as peace is declared and business abroad resumes its normal course, the demand for cotton and the prices obtainable will inevitably exceed those prevailing in normal years. Were there adequate means for the storage of the crop and were cotton planting established upon a firmer financial basis, the crisis might not be so acute. Moreover, the situation is further complicated by the inadequate methods of financing the crop during the growing period. In the past, bankers in the North have not taken a great interest in this matter; they have rather left it to the South, where money is scarce and high rates of interest prevail. It has been customary for the country merchant or banker to furnish the requisite supplies and money attendant upon the production of the crop until its harvesting, and for the planter to rely upon the quick

sale of his cotton to meet his obligations, reimbursing his banker or merchant as he sells his crop, the security for such loans not being such as would be discounted by the Federal Reserve banks.

The condition, then, confronting the cotton planter at the present time is such that if, upon the harvesting of his crop in the near future, he is required to meet his pressing obligations, he will be forced to sell his cotton at a price in many instances less than the amount that it cost him to produce it. The results of this would be that the South, which has been making such rapid strides in economic developments in recent years, would suffer an irreparable setback, and the cotton-growing industry would dwindle to such quantities as would be sufficient to meet our home demands. The situation, then, is most serious. Its gravity cannot be overestimated.

Bearing in mind that loss of the European market is but temporary, it is readily seen that what is needed is the devising of some means whereby the cotton planters may secure relief from their creditors, enabled to store their crop, and reap the benefit of the increased market that the close of the war will bring. Private efforts have proved unavailing for the proper financing of the crop. It is then imperative that the Federal Government extend aid to cotton growers at this time. It occurs to me that the situation can be relieved if the Federal Government will act along the following lines:

1. The Government of the United States should temporarily inaugurate a system of examination and certification of cotton by a corps of district inspectors, whose duty it should be to stamp every bale as to quality and grade.
2. The Government should designate warehouses suitable for the storage of cotton; such warehouses might be temporarily under Government control.
3. The Government should provide for the issuance of receipts to the owners of cotton, stating the number of pounds they have stored in the warehouse.
4. The Government should arrange with banks to loan, at a fixed rate of interest, given amounts per pound of each grade of cotton upon these warehouse receipts as security.

By this means the planter would be equipped with security upon which he could borrow the funds requisite to enable him to carry the crop through the duration of the war, and the banker, in turn, would be enabled to make loans upon security which would be backed by Governmental certification. The advances upon these receipts need not be in excess of 75 per cent. of the actual value or the market price upon the day of advance, the planter carrying the difference himself and obtaining whatever profit there may be in holding his cotton.

The creation of cotton warehouse receipts that will serve as negotiable securities is really no new and radical departure. It has long been customary for bankers to advance funds on corn, wheat and other grains deposited in elevators. Why not provide for loans on cotton properly inspected, especially when such action will avert the disaster that is threatening the South? Why not extend to cotton the privileges granted other agricultural products under similar conditions?

For the United States Government to extend aid at this time is no more than European Governments have been doing. They have long realized the necessity of furnishing a stimulus for the culture of cotton. At these international conferences of which I have spoken I have heard many able men propose that their Governments furnish money for the development of cotton growing in their colonial possessions. In fact, it was in accordance with the opinions expressed at one of these conferences at The Hague, which I had the pleasure of attending, that the British Government passed a law appropriating £3,000,000 (\$15,000,000) to promote the growing of cotton in the Sudan. Several millions have been spent by the British cotton-growing associations in experimenting in the English colonies on cotton culture, and there are gigantic efforts being made to produce Indian cotton in large quantities. I am informed by the secretary of the International Federation of Master Cotton Spinners and Manufacturers' Associations that the growth of Indian cotton is increasing at the rate

of about 500,000 bales a year. In view of these efforts to stimulate cotton culture upon the part of European countries—efforts which will undoubtedly be renewed upon the close of the war—it is all the more essential that every care be taken by the United States to prevent any serious calamity striking the industry in this country.

The need of preventing any injury to our cotton crop is fully appreciated in England, and English cotton manufacturers are a unit in desiring that steps be taken looking toward the relief of the present situation. For example, upon the eve of my departure from England, Sir Charles Macara, president of the International Federation of Master Cotton Spinners and Manufacturers' Association, had the secretary of the organization meet me at Liverpool and most urgently request me to urge the adoption of some means of relief for the cotton planters. Further, Sir Charles Macara wrote me a few days ago a letter under date of August 31, which the following are extracts:

"The purpose of this letter is to confirm to you the statement made by our secretary on Saturday, that it would be a great calamity if, owing to the European war, the cotton farmers of the United States of America were ruined. Their ruin will certainly be brought about unless steps are taken by the Government of the United States of America, in combination with large financial houses, to hold back several million bales of cotton. It must be borne in mind that if the war lasts longer than the end of this year there will be a surplus of American cotton of some 5,000,000 bales, and this must necessarily have a depreciating effect on the price of American cotton, and the producer will necessarily be the greatest sufferer in the end. It is neither to the interest of the cotton spinners of the world nor to that of the United States of America, as a nation, that the price of cotton be reduced to such a low level, as, say six or eight cents.

"I recognize more fully than perhaps anyone else the very serious situation, having—in consequence of my various public positions, and especially as president of the International Cotton Federation—been obliged to give a very close study and attention to the question of the cotton supply. On the occasion of the tour of 120 cotton spinners and manufacturers of all nationalities, which I led in 1907 through the cotton-growing States of America, it became evident to me that in years of exceptionally large cotton crops it would be in the interests of the millions of cotton producers and cotton-mill operatives that a scheme for properly packing and warehousing the surplus cotton crop should be initiated, and in view of the certainty that there will be an enormous surplus in this year's American cotton crop, such a scheme undertaken by the Government of the United States of America would be a safeguard against dire calamity.

"I trust you will submit this letter to President Wilson, who, I am sure, will share my opinion."

Sir Charles Macara, the writer of this letter, is considered the highest authority in England on the cotton industry, and his opinions are there regarded as the last word upon the subject. He has spent a lifetime in connection with the cotton industry, and is thoroughly acquainted with all the various stages of the evolution of the cottonseed into the cotton fabric.

We are confronted with a crying need; a situation is at hand imperiling the prosperity of a great section of this country. The means of relief are present. The Government has the power, it has the funds, it can render this aid without fear or loss or disaster to itself, and with the realization that it is conferring inestimable benefits upon the South and saving a great industry from jeopardy. Let us not delay; let a committee of broadminded, careful business men be formed at once to co-operate with the Federal Reserve Board in the formulation of a plan of relief.

Sea Island Cotton Oil Mill.

Last week the Sea Island Cotton Oil Co., Charleston, S. C., began operating its new plant on the Ashley River, about \$55,000 having been invested for buildings and machinery. This plant will be operated day and night for about six or seven months of the year, producing 2,000,000 pounds, or over 320,000 gallons of oil. It is driven by electric power, and the machinery includes motors for 230 horse-power, transformers, expellers for oil extraction, cotton gins with daily capacity of 20 bales of cotton, etc.

TRADE WITH LATIN-AMERICA.

Timely Suggestions by Director-General Barrett of the Pan-American Union.

The widespread public interest in the Latin-American commercial opportunity as developed by the European war is being followed by so much misconception, in many circles, of the real trade and economic conditions obtaining in certain parts of Latin-America that Director-General John Barrett of the Pan-American Union in Washington has found it necessary to ascertain by cable the exact business situation in Latin-America, and, as a result, to sound, in justice both to the United States and Latin-America, a note of caution and warning.

On August 8, immediately after the outbreak of the European war, Director Barrett addressed a memorandum to the commercial and financial interests of the United States, urging them to prepare to meet the combined responsibility and opportunity presented in Latin-America by the war. This statement attracted general attention and discussion, but now a new phase of the situation, as indicated by these cable reports from 24 cities in the 20 Latin-American countries, has developed and is requiring careful consideration.

"These advices," he states, "emphasize that what is needed at this hour in Latin-America is not so much a supply of the manufactured products of the United States, although required in considerable quantities, but money, loans and advances, credits on purchases and markets at reasonable rates for raw products which usually go to Europe. If Latin-America can sell at a fair figure her accumulating raw products and buy, in turn, through receiving financial help and co-operation in the form of advances and credit from United States exporters, importers and bankers, the situation will be speedily remedied and the commercial interests of the United States and Latin-America will truly enter upon a new era of Pan-American commerce and comity.

"The fact that the 20 Latin-American countries last year bought imports and sold exports to the vast total of \$3,000,000,000, of which \$2,000,000,000 were transactions with Europe, proves beyond quibble or doubt that the opportunity is there, but subject to the conditions herein noted. That the United States already has a good start and is making encouraging progress is shown by the fact that its exchange of trade with Latin-America has grown in the last seven years, or during the present administration of the Pan-American Union, nearly 100 per cent., or from \$450,000,000 to \$850,000,000.

"The European war, while greatly lessening the sources of Latin-American imports and the market for exports, and opening a corresponding greater opportunity to United States exports and imports, has so unavoidably crippled Latin-American financial resources and commercial machinery that it must require several months or a year before conditions can readjust themselves and permit results that many United States business men expect immediately.

"Despite the efforts not only of the Latin-American embassies, legations and consulates, but of the Pan-American Union, as an international organization, and the United States Departments of State and Commerce to state the situation exactly as it exists, countless articles have been appearing in various newspapers and magazines emphasizing an alleged 'golden opportunity' without pointing out its actual and present environments of money tightness and dislocation of international commercial methods. Numerous business men and commercial agents, in consequence, are crowding the steamers bound for Latin-America with the expectation that they will find the Latin-Americans awaiting them with outstretched hands filled with gold and ready to buy everything and anything they have to sell. These men will presently return to the United States and unfairly condemn and criticize the markets and peoples of the countries visited.

"A great stream of letters and telegrams from both North and South America are daily pouring into the office of the Pan-American Union, as the international American bureau of information, and they prove the widespread interest in the field and opportunity, but they are invariably answered not only with the statement of the actual opportunity, but with an admonition that the Latin-American market, while vastly potential, is at this moment embarrassed by a serious financial

stringency and dislocation of commercial conditions for which it is not in itself to blame.

"The opportunity of the hour, therefore, in a word, is not so much one for immediate large sales of United States manufactured products as one for co-operation and mutual help, together with careful investigation of commercial conditions and preparation to meet future competition successfully."

The South American Coal Trade.

Editor Manufacturers Record:

Some 20 years ago, when Senator John T. Morgan, of splendid memory, was working with all his might for an isthmian canal, I wrote you a few words which said that a young man could do nothing better than inform himself, through the columns of the MANUFACTURERS RECORD and all other sources freely available to him, with special reference to that enormous trade and all its minutiae of detail and peculiarity which would surely come to us from South American ports.

Again I wrote you a letter about five years ago, urging the study of Spanish among all our business men, but more particularly among our young stenographers of both sexes, in order that they might command two or three times the ordinary salary for such work. You have urged it yourself over and over again.

Now the demand comes upon us like the impact of a sledge-hammer. And how many are prepared for it? We can count them here on the fingers of one hand.

Especially do we need it when we must at once prepare to undertake the handling of that vast tonnage of coal which England and other European countries have lost by reason of the war. This enormous trade is ours by prompt and proper effort, but we must act at once.

Arrangements can be made for all the ships necessary. We have an abundance of coal which has been thoroughly and practically tested in these very markets we propose to supply.

Our maximum coal mine capacity in Alabama, as given by Mr. C. H. Nesbitt, our chief mine inspector, is about 25,000,000 tons, of which we would have a surplus of 8,000,000 tons if all our mines were operating to full capacity. With exception of 15 mines, our coal operators have been running only about three days per week or half-time, for fully a year. But there is no one company outside of the iron-producing companies that is strong enough to handle this great South American coal business. What we need is the creation of a mighty corporate force, an aggregation of some 10 or 15 of our best and biggest commercial coal companies, to be thoroughly equipped in every way to handle contracts of such magnitude as are now waiting for us.

It is a golden opportunity, and this great district cannot afford to sit idly by and see other sections or markets seize it and take it from us. We are now 500 miles nearer to South American ports and 31 hours shorter time. We have the cheapest rate on coal to tidewater of any market in America.

Such a company or combination would put thousands of men to work and be of vast benefit to all classes and conditions of our people, and especially would it vitalize our great railroads and cause them to regard any proposed increase in freight rates as a negligible quantity. But it requires "big business" to accomplish it, and there is no other way. Then let it come. There is nothing to fear, for there is no necessity, no temptation and no desire to evade or violate the law in any way. Of one thing we may all of us be very sure: That no matter whose opinion it is, whether mine or that of the most powerful statesman or capitalist in the country, there can be no such thing as big business, upon a sure foundation, unless we, every one of us, learn the profoundest respect for the law. There is no life for business of any kind, for any individual, whether man, woman or child, without it.

Birmingham, Ala.

H. M. McNUTT.

World Trade in Coal.

An interesting and valuable contribution to the discussion of world-commerce emphasized by the European war is a booklet prepared for its customers and the coal trade in general by the Alabama Power Co. of Birmingham. The publication is entitled "Graphic Statistics of the World's Production, Exports and Imports of Coal."

It deals with the latest figures available for such purposes, and its several diagrams and charts based upon the figures enable one to comprehend almost at a glance the possible opportunities before the United States in the foreign coal trade. It is pointed out that the countries involved in the European war and their possessions produce about 58.8 per cent. of the coal of the world, and that the United States produce about 92 per cent. of the output of neutral countries. In 1912 the United States exported about 20,000,000 tons of coal, or only 3.8 per cent. of its total production, while Great Britain exported 72,000,000 tons, or 24.7 per cent., and Germany 34,000,000 tons, or 12.1 per cent. of their respective productions. The United States, Great Britain and Germany export more coal than they import, while France, Russia, Belgium and Canada import more than they export. More than three-quarters of the exports of coal from the United States go to Canada, while the greater part of the remainder is exported to Mexico, the West Indies, Central America and South America, 1,933,414 tons, or nearly 58 per cent. of the total exported to this group, going to the West Indies. In 1911 Great Britain supplied Argentina, Brazil, and Uruguay thirteen times as much coal as did the United States.

Standardizing Building Specifications.

A joint meeting of the committees of the American Institute of Architects and the National Association of Builders' Exchanges, held in Philadelphia, considered and recommended changes in the present practices of building construction, and formulated standardized building specifications, contracts, etc., on more modern and equitable lines.

It is understood that all who were present approached the subject with broad views along lines of equity, and with distinct and clear business principles. As a result a unanimous recommendation was readily reached. This joint recommendation will be properly referred to each national organization for approval, and it is reasonable to suppose, writes Secretary J. M. Vollmer of the National Association of Builders' Exchanges of Louisville, Ky., that this approval will be readily forthcoming, and the present methods which are now being used in building operations, and which are so expensive and uncertain to owners and all interested parties, will be shortly relieved and these operations will be conducted along the lines of modern business principles and methods.

An English Concern to Build an American Plant.

The Power-Gas Corporation, Ltd., of Stockton-on-Tees, England, builders of a wide variety of industrial plants, in a letter to the MANUFACTURERS RECORD says:

"We shall be glad to learn from you the names and addresses of manufacturers of acid-resisting bricks. These bricks are for paving the floors and facing the walls of a building in which sulphur acid will be worked with.

"There are several makers in Great Britain, but we cannot trace any in America, but feel sure that there must be, if we can only get in touch with them.

"We shall require a quantity for a plant which will be built in America after the war is over."

Commerce at Port Arthur.

According to figures prepared by Secretary J. L. Boyd of the Board of Trade of Port Arthur, Tex., the total value of imports and exports and coastwise traffic at Port Arthur and Sabine in the Sabine customs district in the past fiscal year was \$89,322,472, of which \$62,236,894 represented coastwise trade, \$25,167,446 exports and \$1,919,132 imports. The grand total was an increase of \$8,032,721 over the fiscal year 1913. The movement included 2,388,023 tons of coastwise trade, 1,714,517 tons in exports and 543,594 tons in imports, a total tonnage in 1914 of 4,645,134, an increase of 1,762,984 over 1913. Of the imports in the Sabine district in the past fiscal year, 222,475 tons, valued at \$980,228, and of the exports 1,285,383 tons, valued at \$19,108,794, were credited to Port Arthur.

For American Control of Its Own Products*

By ALBERT GREENE DUNCAN of Boston.

Your president feels in addressing you tonight that a most difficult task devolves upon him. The cotton manufacturers of America have had to face problems, and trying ones, but they have been those particularly affecting the industry itself. We have never, at least in the present generation, faced a situation so perplexing and of such world-wide import as now, when in common with so many other lines of human endeavor we find stagnation, disarrangement and threatened disaster on every side.

Why are we as a nation the innocent sufferers from a quarrel not of our own making, and in which we have the strongest determination not to be involved? The causes lie deep in the structure of our country's life and history.

Every nation in its progress from savagery to civilization passes through three well-defined stages of progress. The first may be called natural development, in which men are engaged in fishing, fur trading, the breeding of animals, agriculture and mining. The second may be called industry, in which the raw materials of the mines, farms and forests are combined for the uses of civilization. During this period men gather themselves together in thickly-settled communities, bank credits replace barter and means of transportation for raw materials and finished products are devised. The third and highest stage in national life is that of commerce, when having developed its natural resources, perfected its transportation systems and solidified its credit a nation seeks to specialize in those products which its climate, resources and national character are best fitted to produce, and send these products broadcast throughout the world.

The countries of Europe had passed through the first stage of natural development long before this nation was established, and during our early years they expanded their industries far beyond their own needs, and world-wide commerce has come to them in natural sequence. Their congested populations and highly-developed industries have forced the older nations of the world to seek strenuously an outlet through commerce and colonization, and so their means of foreign transportation have grown, and their trade routes have girdled the globe. Controlling the routes of trade, they have become not only the carriers of their own goods, but the distributors of the merchandise of others, and handling the distribution, they have managed the financing, through which the exchanges of merchandise are made.

This logical and inevitable development has built up in England, France, Holland and Germany a concentration of capital devoted not alone to their own needs, but to the financing and distributing of the products of their competitors. They are not merely producers, but the great middlemen of the world, and this commercial expansion has resulted in cumulative profits to those nations engaged therein. An idea of the immensity of this business is shown by the fact that at the outbreak of hostilities London bankers had outstanding advances of over \$2,000,000,000 for drafts of sellers of merchandise of other countries.

Commerce invariably brings with it a concentration of capital, as international exchange follows the trade routes of the world, leaving its toll with the nation through whose hand it passes. The great commercial nations have thus become the great banker and creditor nations, loaning their capital not only for moving the products, but for developing the resources of the countries with whom they trade.

In natural development and industry this country stands pre-eminent. Its progress has been the wonder of all nations. In increase in population, in railway mileage and by all the standards that material prosperity is judged we are leaders. In actual total wealth we rank first. We possess \$137 per capita, but so great has been the task before us in our comparatively short national existence that agriculture and industry have been fully taxed to keep pace with our expanding population. Intent on our internal progress, we have never

taken the position as a commercial nation to which our resources, energy and skill entitle us.

This is but a hasty summary of the progressive development of nations at peace, but a war, the extent or the consequence of which none of us have ever dreamed, has plunged the world in disorder. Driven by necessity to use every resource in their own dire extremity, the warring nations have called and withheld the capital hitherto freely loaned to the peoples of Asia and the Western Hemisphere, and by the withdrawing of this capital they have not only made their debtors feel the pinch of want, but have been unable any longer to facilitate the necessary distribution of the products of nations not involved in the struggle.

To put the matter more concretely, the business of the world has been done on the basis of credit through the medium of the 90-day draft on London, probably not 5 per cent. of the transactions between nations ever being settled by the actual transfer of that universal standard of value—gold. With this suspension of credit the world finds itself forced to a cash basis, and though we may wish as a nation to dispose of our products, which are in universal demand, and are eager to buy from other nations the materials on which our industries depend, we are reduced very nearly to the old system of barter prevailing in uncivilized times. It is estimated that England during the last few years has annually invested among the nations of the world about \$1,000,000,000 of her surplus capital, and now holds over \$5,000,000,000 of American securities. We have paid the interest on this vast sum and have met partial calls for this loan from time to time by the shipments of grain, cotton and other commodities, yet we are still very much their debtor. Figures are inadequate to picture the amount of this indebtedness, for it is a sum far beyond the power of this country or any other country to pay on demand. This is said with no disparagement of our prosperity. In per capita wealth and in boundless natural development we have congratulated ourselves for many years that we were one of the richest nations in the world, but our assets are not liquid. They are tied up in railroads, mines, mills, and in all the multitude of our business enterprises which, although real wealth, are not readily convertible. England, France, Holland, and in a lesser degree Germany, have in addition to these fixed assets, accumulated as the result of their longer national life and highly developed world commerce a much larger surplus of quick assets than we can possibly claim, and in the time of calling of loans it is with nations as with men, that conversion of fixed assets is a slow process, often accompanied by great shrinkage of capital.

Because of the optimism that is characteristic of the American temperament we have heard a great deal in the last few weeks about the development of our export trade. Follow this for a moment and see where it leads us.

South America is our nearest neighbor, and trade routes thereto are naturally the least liable to interruption by any of the warring nations. Further, we would seem to be in the comfortable position of a salesman who, through disaster, had lost his chief competitor. Without any spirit of pessimism it behooves us, however, to face the situation squarely, and we find that South America is deeply in debt to the Old World; that almost all their government loans are owned in Europe; that most of their railroads and industries are financed and even operated by foreigners. The nations to the south of us are in an earlier period of national life than our own country, and have not far advanced beyond the stage of natural development, with industries as yet nowise ample to their needs. Our southern neighbors have been the largest users of foreign credit, on which they have been almost entirely dependent. These advances have taken the form not only of actual investments of capital in their enterprises, but in the granting of long credits to merchants and in the financing of all the complicated transactions between producer, dealer and consumer. As a result of this financial relation the trade routes to them and international exchange have been in the hands of our compet-

itors, and we as a nation have been obliged to depend upon our rivals for the distribution and financing of what small amount of trade we have secured from South America.

Are we prepared at the moment with all the problems, which we face in upholding our own complicated structure of credit, to assume the added burden of the financing necessary to relieve our South American neighbors from the desperate situation in which they find themselves? Means are ready at hand to facilitate this financing by exchange through New York rather than through London, but if we expect to do more now or in the next few years than to sell emergency goods we must be prepared to assume the additional burden of financing the trade and assisting the enterprises from which European nations may be forced to withdraw.

I have gone into this discussion of international trade in some detail, for the problem which confronts us at home and abroad appears to be largely a financial one, affecting not only our international relations, but the relations between producer, manufacturer and consumer in our own country. By the use of the easiest methods we have lulled ourselves into fancied security and turned over to foreign nations five-eighths of our cotton crop, 15 per cent. of our wheat, 60 per cent. of our copper production, besides numberless other commodities, both raw and in the finished state. We have received in exchange for these an influx of gold or its equivalent, congratulating ourselves meanwhile that the balance of trade was in our favor, yet not realizing that we were leaving to our competitors in the world market the banking facilities and the distribution of our own products.

It is time for us to take account of stock and to realize that to produce our raw materials, to manufacture them into finished goods and be satisfied to sell them merely to our people or to the foreigner at our ports is a mistake. We should take this opportunity which has brought such a rude awakening to seize by every means within our power upon the avenues of distribution represented by the great trade routes of the world, where the fleets of foreign merchantmen go to and fro and where our flag is rarely seen. As a natural sequence of such foreign commerce we shall secure for ourselves the added reward that the financing of the raw materials and manufactured goods exchanged with other countries must bring us.

After years of effort, the beginnings have been made in the foundation of an international exchange financed by our own banks, but we should not be satisfied until our manufactured products as well as our raw materials are carried to our customers and even to our competitors in our own ships. By no artificial means can our merchant marine be revived. It is not sufficient for us to own ships, we must be able to operate them under the American flag along the trade routes to the ports where we wish our products to go, and to do this we must devise wise measures by which the operation of such ships can be profitable. Our present antiquated navigation laws impose a burden on the operation of ships under the American flag that will not be relieved by any subterfuge of American registration. In other words, unless we make shipping as profitable as other lines of endeavor we cannot expect American capital to embark upon it. Recent proposed legislation, it may be noted, has not been drafted in favor of shipowners, but will tend to increase rather than diminish the handicap under which they now labor.

How can we convert our national wealth into quick assets? For if, as has been said, the trade follows the flag, how much truer it is that trade follows the man with the money bag?

We can stop our national tendency toward waste and extravagance, not alone in the individual, but in our governmental activities. Coincident with the high cost of living has come the higher cost of government, and to a more marked degree, for figures show that in the last 12 years the average citizen pays 63 per cent. more taxes without commensurate benefits for such payment. We also have the multiplication of commissions, the endless waste which a political system based on patronage entails, the unnecessary expenditure of the nation's wealth in buildings and improvements which satisfy our national pride rather than enhance our national wealth and stability.

We must also by every means in our power stop the nation-wide distrust of corporate aggregations of capital. In the last few years most of the legislation having to do with business has been passed with the intent to punish rather than preserve, to tear down rather

*Presidential address at Lenox meeting of the National Association of Cotton Manufacturers.

than to build up. It has been strangulation rather than regulation.

Capital is not the investment of the millionaire; it is the concentrated savings of the millions. Our great corporations are not owned by a few, but are the industrial savings banks of the nation, and it is no exaggeration to say that the majority of men managing our corporations, both large and small, regard themselves as trustees for the savings of their fellows.

While no doubt evils have crept into our business life, there is no justification for the unproved and sensational attacks which have been directed against capital, without any thought of the injury inflicted on the multitude of small contributors to the great aggregation.

The occurrences of the last two months have brought home to us as never before the power and the benefit to every citizen in the republic, no matter how humble, of capital when rightly used, and to the glory of American business be it said that in the trying times through which we are passing capital has borne the full brunt of the emergency, realizing that it was only by its free use that the complicated structure of our industrial and commercial life could be kept secure.

If there existed a money trust in this country, cruel, grasping, and seeking its own selfish ends, as has been so vehemently charged, the last 60 days would have seen one-half of our enterprises in the hands of receivers or being bought up at bargain prices.

But how different the action of so-called concentrated financial power. With the true spirit of co-operation, instead of causing wrecks they have furnished pilots and lighthouses, and instead of the destruction of commercial enterprise it has been maintained and preserved in spite of the interposition of strange and unanticipated issues.

The history of the last few years of National and State legislation has witnessed a development of commissions never before dreamed of in any country under a republican form of government. These commissions have been organized for every conceivable purpose, but mainly their energies have been devoted to the regulation and investigation of so-called existing evils in our commercial structure, rather than to the development of our admittedly adequate resources along lines not hitherto undertaken. How much wiser it would be if commissions should be empowered to study the whole subject of the encouragement of American trade and recommend to Congress what legislation is needed to enlarge our surplus of quick assets, free our capital from harassment and restriction and expand our foreign trade by enabling American shipping to take its place on the high seas as the messenger of our already firmly established industries. International exchange, with

its inevitable profit, would then be in our own hands, and no artificial stimulation would be needed to establish in this country the financial capital of the Western Hemisphere. The periods of industrial depression through which we have passed would thus be obviated by extending our influence over the world, instead of fighting each other for our own market, so often overstocked. I believe that many of the business evils so bitterly complained of may be traced to the source of excessive competition and would then surely right themselves without government regulation.

What I have hitherto said applies to our industries in general, but to cotton manufacturing most of all. The spinning and weaving of cotton cloth was the first industry in America to leave the home for the factory. From small beginnings it has built up an invested capital of at least \$843,000,000. It is still, as it always has been, highly individualistic. It is one of the few industries against which no charges of illegal combination or any of the other wrongs so bitterly complained of have ever been made. It is the one industry adapted to supply the needs of all nations of the world, whether civilized or uncivilized. To anyone familiar with the overproduction which has been in evidence during the last decade it is patent that we can more than supply the wants of our own people. We are, therefore, the industry most dependent on the development of our country as a shipping and financing nation. To use a homely expression: In what export trade we have so far done we find ourselves in the position of a storekeeper who uses his competitors' banking facilities and delivery wagons. If the cotton industry is to be prosperous and give steady employment to its vast number of operatives and a fair return to its investors, we must make every effort to get and keep the financing and distributing of our products to the nations of the world out of the hands of our competitors; for there is no question that with these facilities in hostile hands we are constantly being put in a position where competition is impossible.

I would urge upon you, gentlemen, members of our Association, to give attention to these financial problems and bring them before your representatives in State and nation in no uncertain terms. For the people of the United States must learn a lesson from the present crisis and make it their chief concern that America shall in the future control the financing and distributing of its own products.

W. W. Croxton, general passenger agent of the Atlanta, Birmingham & Atlantic Railroad, is circulating for display at passenger stations and other places along the line of the railroad a folder setting forth the opportunities from South Georgia for the growing of alfalfa.

\$4,500,000 Bonds for Birmingham's Water-Works.

Bonds to the amount of \$4,500,000 were voted last week for the municipal water-works which the city of Birmingham, Ala., intends to construct. The municipal officials had been giving attention to the need for a new and enlarged water supply to meet the needs of this rapidly-growing industrial city and its manufacturing suburbs, the bond election having been called after the construction had been recommended by the report of Julian Kendrick, city engineer, who estimated the cost at \$4,496,000. In due course detailed plans and specifications will be prepared so that proposals can be invited and the work undertaken. The engineer's report included recommendations for a pumping station with a daily capacity of 28,000,000 gallons of water, a reservoir with a capacity of 300,000,000 gallons on Shades Mountain, a reservoir and filter plants near East Iron-dale, etc. It is understood that efforts will be made for early invitations to bid on the construction and machinery that will be required.

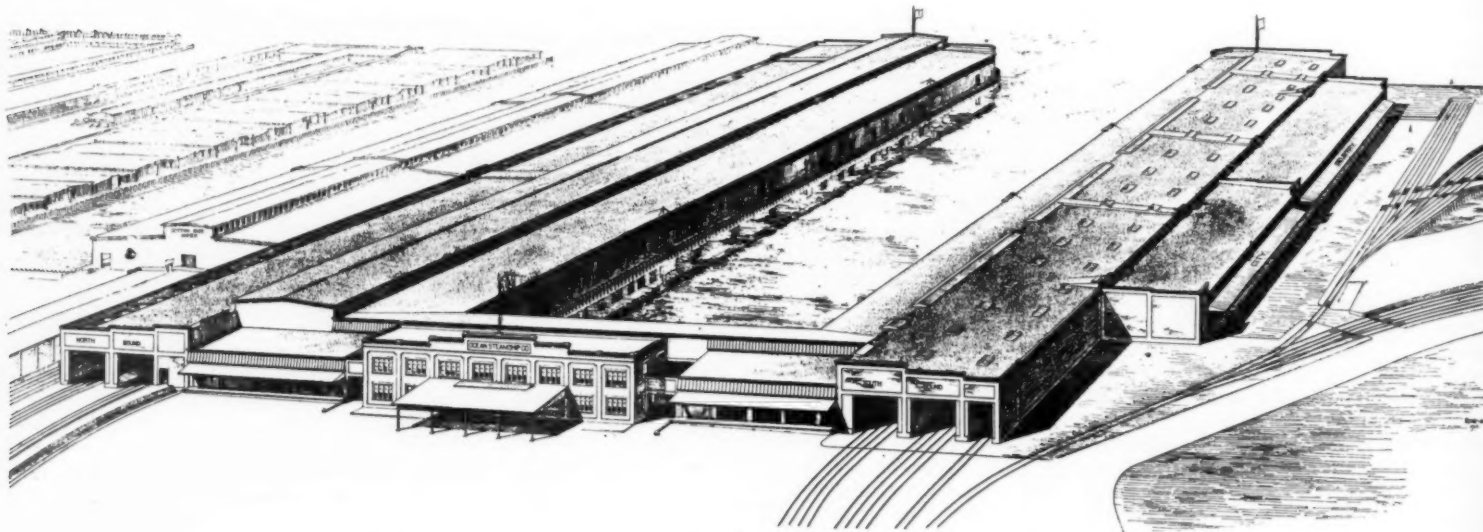
Chattanooga's Invitation.

In anticipation of the meeting this month at Birmingham of the American Iron and Steel Institute, the Chamber of Commerce of Chattanooga, Tenn., Paul J. Kruesi, president, is sending to the members of the Institute who have announced their intention to attend the meeting a handsomely illustrated booklet entitled, "Chattanooga, the Dynamo of Dixie," to emphasize a cordial invitation to visit Chattanooga on a trip to the South. The booklet is a splendid exposition of the scenic attractions of the city and of its strategic industrial and commercial importance.

For Agricultural Dynamiting.

To contract for agricultural dynamiting and sell dynamite are the principal objects of the Tampa Agricultural Dynamite Co., Tampa, Fla., which has been incorporated with \$5000 capital stock. The company's officers are: Amos H. Norris of Tampa, president; W. E. Arthur of Fort Meade, vice-president; Clarence B. Meade of Tampa, secretary-treasurer.

E. D. Stratton, Chattanooga, Tenn., land and industrial agent of the Queen & Crescent Route, is circulating a booklet telling of the agricultural and industrial opportunities in the territory of his system.



TERMINALS AT SAVANNAH FOR OCEAN STEAMSHIP CO. OF NEW YORK.

These facilities, recently fully described, to cost about \$800,000, and contracts have been awarded. Mainly reinforced concrete construction; plans provide for slip 1020 feet long by 225 feet wide, with 26-foot depth at low water; steel freight sheds and office building covering 11½ acres; northbound freight shed covering 249,

733 square feet and southbound shed 166,898 square feet; shed at head of slip with area of 30,910 square feet; 17 railroad tracks two miles long, under sheds; platforms for 225 freight cars; city delivery shed of brick and steel, 782x63 feet; office building of brick and steel, two stories, 175x52 feet; reinforced concrete bulk-

head along Savannah River and around three sides of slip, 2500 feet; slip to berth four steamships; dredging contractor, P. Sanford Ross Corporation of Jersey City; construction contractor, Phenix Construction Co. of New York; chief engineer, J. G. Basinger of New York.

TEXAS CITY'S HARBOR.**Channel, Dike and Warehouse Improvements Being Pushed.**

Board of Trade,
Texas City, Tex., September 26.

Editor Manufacturers Record:

The temporary depression in commerce due to lack of demand for cotton in foreign markets has not resulted in interfering with harbor and water-front improvements at Texas City. The Government is proceeding with the channel and dike improvements under an appropriation of \$1,400,000, while the Texas City Transportation Co. is providing for future business through the construction of a large fireproof warehouse at the docks.

The Government harbor work is now well advanced. Over two miles of piling have been driven in the construction of the dike, and the work is proceeding under the favorable conditions of good weather and prompt shipments of material. The work is being carried on from both the shore and outer ends, and the prospects are bright for the completion of piledriving early next spring. The total length of the dike will be 28,200 feet, or nearly six miles.

The driving of piling at the shore end started 1250 feet out from the shore line. Over one mile of piling has been driven, and most of this has been filled over. The filling is being done by the Government dredge Col. A. M. Miller. Dredging along the side of the dike the material is being deposited on each side of the row of piling until the tops of the piles are covered and a solid earthen embankment created on each side. The dredge at the present time is engaged in filling at the outer end, but with the further advancement of piledriving on the shore end the dredge will return. A little later the dredge engaged in widening and deepening the ship channel will deposit dredged material upon the dike, relieving the Government plant.

The Government recently decided that the dike should be extended to the shore line at Texas City, and let a contract for this work. A total of 1200 linear feet of piling is being put in. This leaves only a 50-foot opening between the two dikes through which small craft may pass, obviating the necessity of going around the dike in order to reach the upper bay. The passenger pier built several years ago and used as a landing for small craft, including the Texas City-Galveston ferry, is being used as the structure to carry the piledriver, and since the work started the boats have been landing at the shore end of the pier. It is understood that this is a permanent arrangement, the Government having dredged an 11-foot channel to the shore.

Work is progressing rapidly on the widening of the ship channel to 300 feet and deepening to 30 feet. This work, which is being done by contract, should be completed by next spring. When it shall have been completed the channel will be of such dimensions as to admit the largest vessels in the Gulf trade.

While the Government improvements are going on, the Texas City Transportation Co. is pushing work on the new warehouse on the north side of Pier A. This structure will be 880 feet long and 163 feet wide, constructed of structural steel and sheet metal. The foundations are now in and work on the superstructure will start soon. This warehouse and the enlargement of the slip immediately north will represent an outlay of \$110,000.

L. C. TALMAGE.

For Jacksonville's Terminal.

The municipal terminal for which Jacksonville, Fla., has issued \$1,500,000 bonds will have piers 1000 feet long and 200 feet wide, instead of 600 feet long as previously announced. Practically all property necessary has been acquired, and contract has been awarded to Wade, Clower & Wade, Jacksonville, to construct the retaining wall at \$2.50 per linear foot, the Port Commissioners to furnish material. Dredging contract has been awarded to the Home Dredging Co. of Mobile at 6.94 cents. F. W. Bruce, chief engineer, Port Commissioners, recently described in the MANUFACTURERS RECORD this important municipal improvement. His statements included the following details:

The object of these terminals is to keep pace with the general river improvements inaugurated and nearly completed for a 30-foot channel from Jacksonville to the sea by the Government. Existing lines of traffic

are not to be disturbed, but it is expected that completion of the work will enable Jacksonville to take its legitimate position as a location for exporting and importing. The city's proximity to Panama, South America and West Indies are important advantages in this direction.

Completed project to embrace a municipally-owned terminal for interchange of water and rail traffic to serve the city's commercial interests; reclaim about 100 acres of submerged land for yard and warehouse purposes and connect with all railroads entering Jacksonville; completed project to embrace 4200 feet of water front; piers and bulkhead slips of Lackawanna steel piles and filled to elevation of 7 feet; marginal wharves 30 feet wide on pile construction surrounding filled portion of the piers.

FOR EMERGENCY CURRENCY.**Currency Association Organized by San Antonio Banks.**

Chamber of Commerce,
San Antonio, Tex., September 25.

Editor Manufacturers Record:

The San Antonio banks have started a Currency Association, of which practically every bank in Southwest Texas is a member. Through this association \$4,181,875 will be added to the circulation in Southwest Texas to relieve the cotton situation. Secretary of the Treasury McAdoo has been notified of the formation of this association, and as soon as the directors of the association have passed on the collateral and commercial paper offered by the national banks composing this association for security and the Secretary of the Treasury has recommended the securities, the emergency currency will be authorized.

Dr. Frederick Terrell, president of the City National Bank of San Antonio, was elected president of the association; Joseph Muir, Jr., of San Antonio, vice-president; J. L. Brown, secretary, Karnes City, and J. H. Frost, treasurer, San Antonio. Five members were chosen to form the executive committee. In this committee is vested the power to transact all business, a part of which business is to pass on all securities offered.

Much enthusiasm has been shown by the bankers of Southwest Texas over this movement. Every national bank in the San Antonio district, with the exception of two, were represented in the first meeting of the association, and these two banks have since petitioned for membership and have been admitted.

The combined capital of the banks affiliated with the association is \$6,550,000. Of this amount, \$4,445,000 is capital and \$2,105,000 is surplus. Under the terms of the Aldrich-Vreeland act the association can issue currency to the extent of 125 per cent. of the combined capital and surplus. Thus the combined circulation can be \$8,188,125, but from this amount the outstanding circulation of \$4,066,250 must be deducted, leaving \$4,181,875 which can be issued as emergency currency.

This emergency currency will be put into circulation among the farmers and business men just as soon as possible. In the meantime offices will be established in San Antonio and the machinery of the organization will be put into motion.

W. E. LONG,

Publicity Manager.

[Similar "currency associations" should be formed everywhere in the South, that as much relief as possible be given not only to cotton growers, but to all business interests suffering because of the financial stringency.—
Ed. MANUFACTURERS RECORD.]

Henry Morrison Flagler.

In memory of Henry Morrison Flagler, who died in May, 1913, has been published in appropriate covers a volume reproducing the report of the memorial service held last March in the Royal Poinciana Chapel, at Palm Beach, including the address of the Rev. George Morgan Ward, D.D., LL.D., his pastor for 16 years, and of comments by the public press in Florida, Massachusetts, South Carolina, Georgia, Maryland, Tennessee, Alabama, New York and Montana at the time of the death of the creator of the Florida East Coast Railway and pioneer in the upbuilding of that section of Florida.

TO REDUCE COTTON ACREAGE.**Less Cotton and More Foodstuffs to Be the Slogan in Georgia.**

[Special Correspondence Manufacturers Record.]

Atlanta, Ga., September 25.

It is believed here that the plan for reducing cotton acreage adopted by the Georgia Chamber of Commerce at its annual meeting in Macon September 23, which it has named the "Lee County Plan," because the basic idea originated in Lee county, Georgia, where the farmers are now being organized and a charter applied for, will prove to be the solution of the South's cotton problem.

Robert F. Maddox, a vice-president of the Georgia Chamber of Commerce, and one of the most widely known of Southern bankers, stated in an address before the annual meeting that he believed this plan to be the only one so far advanced that is both practical and legal, and that if it is generally adopted throughout the cotton States it will raise the price of both this year's and next year's cotton to normal level.

This plan provides a contract between farmers to limit production to 10 acres of cotton to the mule or plow, and makes it absolutely legal and enforceable by injunction, by incorporating a county association of 75 per cent. of the farmers, with the right to establish branch associations in all other counties of the State on the application of 75 per cent. of the farmers of the county, thus avoiding the expense and delay of incorporating in more than one county in a State. Skilled lawyers pronounce the plan absolutely constitutional, and say that National and State governments cannot legally, under either the Federal or State constitutions, restrict cotton acreage or tax excess production.

The "Lee County Plan" will be presented to the delegates to the Southeastern Food Crops Conference, which the Georgia Chamber of Commerce and the Commissioner of Agriculture of Georgia have called to meet in Atlanta October 5 and 6, and it is hoped that the plan will be adopted for all of the Southeastern cotton States. President Wilson telegraphed the Georgia Chamber of Commerce during the annual meeting as follows:

"The White House,

Washington, D. C., September 23.

"President Georgia Chamber of Commerce, Macon, Ga.—I congratulate you upon your work during the last year. The effect of the European war upon cotton confirms the wisdom of your campaign for the increased production of food crops. I heartily commend the purpose of the Southern Food Crops Conference called by you to meet in Atlanta October 5. The people of the Southeast can do nothing better for their permanent welfare than to produce food supplies at least sufficient for own use.

WOODROW WILSON"

The Georgia Chamber of Commerce is urging the increased planting of food crops, and particularly the fall grain and winter cover crops, and is preparing to furnish the farmers information on the standardizing of the preparation and marketing of grains and hay on lines prepared by a committee of experts, with the view to putting Georgia grains and hay on a parity with the Western products in the market and as a basis for the advancing of supplies by merchants and money by banks.

Seeks Location for Industrial Plant.

Mr. Egbert B. Cresswell, of Thomas Brothers Aeroplane Co., Bath, N. Y., writes to the MANUFACTURERS RECORD as follows:

"The company I represent desires to locate in a city of 20,000 to 30,000, situated on lake or river, and as they are to increase capacity 100 per cent. and manufacture a new type of engine designed for aeroplanes, the subject may interest you. If suitable location can be secured with factory building of 18,000 to 20,000 square feet of floor space the capital will be increased and investors living in the city will be given an opportunity to obtain the stock. They desire reasonable rent, with an option to purchase later. The river or lake will be used for the school of aviation and for the experimental work with the new models of flying boats and hydroplanes.

Trying to Improve on the Garden of Eden.

The people in the vicinity of Charles Town, W. Va., are preparing to make an active campaign to tell the world something about that marvelously beautiful and blessed region known as the Shenandoah Valley of Virginia. This veritable garden spot, which looks as one travels through it as though it had attained unto the very highest degree of prosperity, with farms that are the envy of every farmer who sees them, with orchards producing more and better apples than the much-boasted apple regions of the Pacific Coast, with a look of flourishing prosperity wherever one travels, is yet not content with its achievements. It aims to do still greater things. Surely, if a land so prosperous and so blessed as that of the Shenandoah Valley needs to make known its advantages to the world and to bring new people and new enterprises for its broader development, there can be no other spot found this side of the Better Land which has a right to say that it does not need to advertise or to attract new people and new enterprises. Success to the people of Charles Town and the adjacent country who are taking the lead. They need only tell one-half of the truth about that region to make those who have never seen it doubt everything they say; for nothing but a personal visit can ever enable the outsider to fully comprehend its beauty of scenery, its wonderful fertility of soil and the abounding prosperity which is seen in every direction.

Turning to United States for Railway Supplies.

Owing to conditions brought about by Europe's war, a number of foreign concerns which have heretofore bought their supplies on the continent are now turning to the United States. One indication of this is that the United States Metal & Manufacturing Co., 165 Broadway, New York, has been appointed resident purchasing agent in America for the following companies:

Underground Electric Railways Co. of London, Ltd.
The London General Omnibus Co., Ltd.
The Metropolitan District Railway Co.
The London Electric Railway Co.
The Central London Railway Co.
The City & South London Railway Co.

This does not necessarily mean that these companies will be immediately in the market for any large amount of stuff, nor does it mean that they will necessarily be permanent buyers of American supplies; but for the time being, at least, it indicates that purchases which they have heretofore been making on the continent will now have to be made in the United States.

Virginia Rutile.

Virginia produced all the American output of rutile in 1913, according to the United States Geological Survey, the deposits being located at Roseland, Nelson county. During the year the company which controls and works these deposits produced 305 tons of rutile, valued at about \$49,000. A large part of the rutile produced in 1913 was used in the manufacture of titanium carbide electrodes for arc lamps. A part of the ilmenite found in the deposits and separated by means of a magnetic separator has been sold for use in making electrodes for electric lights, and the experiments with the electric furnace point to the possible use of ilmenite in the direct production of tool steel.

To Drain 265,000 Acres in Florida.

A court decree has established the Upper St. John's Drainage District, Titusville, Fla., recently proposed, and organization will soon be effected. This district embraces 265,000 acres of land in St. John's River Valley in Brevard, Orange and Osceola counties, including the basins of Lakes Poinsett, Winder and Washington. Isham Randolph & Co., Chicago engineers, have reported on this project.

Chattanooga Plant to Cost \$450,000.

Preparations are being made to begin the construction of the Chattanooga (Tenn.) Gas & Coal Products Co.'s plant. Nearly all the bids have been received for

by-product and oven machinery, to be opened within 10 days. The plant will be located at Alton Park, near Chattanooga, and will cost about \$450,000. It is expected to handle 500 tons of coal daily and produce about 400 tons of coke, in addition to which the company expects a daily output of about 4000 gallons of tar and about 11,000 pounds of sulphate of ammonia.

Southern Appalachian Good Roads.

The people throughout the Southern Appalachian country, appreciating the valuable work being done by the Southern Appalachian Good Roads Association, are showing deep interest in the sixth annual convention of the association, to be held at Bristol, October 6-9. Several Southern Governors, including Governor Craig of North Carolina, Governor Stuart of Virginia, Governor Hatfield of West Virginia and Governor Hooper of Tennessee, are expected to attend.

The questions of financing, location, construction and maintenance of roads and State and Federal aid will be discussed by some of the leading men of the country. Among the speakers already announced by Joseph Hyde Pratt, president of the association, are: Major W. W. Crosby of Baltimore; G. P. Coleman, State highway engineer of Virginia; W. S. Keller, State highway engineer of Alabama; Henry R. Brown, president East Tennessee Good Roads Association; F. L. Seely of North Carolina; Congressmen John H. Small of North Carolina, Sam R. Sells of Tennessee and C. B. Slemph of Virginia; A. G. Batchelder of New York, R. Tate Irvine, Geo. E. Cassel and H. G. Peters of Virginia, Cyrus Kehr of Tennessee and Charles P. Light of Washington.

The Cotton Movement.

In his report for September 25 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 56 days of the present season is 582,795 bales, a decrease under the same period last year of 1,094,669 bales. The exports were 73,533 bales, a decrease of 717,480 bales. The takings were, by Northern spinners, 122,377 bales, a decrease of 90,635 bales; by Southern spinners, 178,497 bales, a decrease of 151,309 bales.

Increasing Freeport Sulphur Facilities.

[Special Correspondence Manufacturers Record.]

Freeport, Tex., September 26.

Work on plant No. 2 of the Freeport Sulphur Co. is reaching a state of completion. This plant was begun in October, 1913, and will increase the present horsepower of the mines to 10,000. A Westinghouse electric turbine generator set is also installed in this plant, which will feed electrical current to the transmission line running to the town of Freeport, giving to Freeport a light and power service unequalled anywhere.

The Southern Railway Co., because of a decrease in its revenue from passenger traffic, resulting apparently from uncertainties caused to business affairs by the war, will reduce temporarily to a minimum the number of ticket collectors employed on trains. A. H. Plant, comptroller, says that this decision will be made effective October 1.

Michael Jenkins of Baltimore has been elected vice-president of the Northern Central Railway Co., as a result of changes in the terms of its lease to the Pennsylvania Railroad.

Eighteen companies for the storage of cotton in 10 counties of South Carolina have been commissioned by the Secretary of State since August 31. They represent an aggregate capital stock of \$50,700.

It is estimated that recent annexation of territory to Richmond City, Va., will increase the taxable values of the city by about \$12,000,000.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

Bonds Voted.

Knoxville, Tenn.—City issues \$25,000 bonds for street paving.

Rockwall, Tex.—Rockwall county will issue \$20,000 bonds to improve roads.

Starkville, Miss.—Oktibbeha county voted \$130,000 bonds to construct roads.

West Palm Beach, Fla.—City voted \$100,000 bonds for hard-surfacing streets, etc.

Bonds to Be Voted.

Ludlow, Ky.—City votes in November on \$40,000 bonds for street improvement.

Osceola, Mo.—St. Clair county votes November 3 on \$14,000 bonds to construct roads.

Contracts Awarded.

Fort Pierce, Fla.—St. Lucie county awarded contract to resurface and widen five miles of road; amount available \$11,000.

Louisville, Ky.—City awarded \$53,200 paving contracts.

Richmond, Va.—City awarded \$150,000 contract to lay about 100,000 square yards of asphaltic concrete paving.

Richmond, Va.—City awarded \$20,000 paving contract.

Richmond, Va.—City awarded contract to construct brick sidewalk; amount available \$18,000.

West Palm Beach, Fla.—Palm Beach county awarded contract to build 25 miles of rock boulevard.

Whitesburg, Ky.—Letcher county awarded contract to grade six miles of road; amount available \$10,000 to \$15,000.

Contracts to Be Awarded.

Baltimore, Md.—City receives bids until October 7 for 1200 square yards of grading.

Baltimore, Md.—City receives bids until October 7 for 17,970 square yards of paving.

Birmingham, Ala.—City received bids until September 29 to pave sidewalks; 500 yards cement sidewalks, 300 yards excavation and 500 linear feet combined curb and gutter; cost \$1000; 3000 cubic yards grading, 290 square yards brick paving, 1400 linear feet curb and gutter, 700 yards cement walk, 400 cubic yards of slag and 400 cubic yards of chert; cost \$4300.

Charleston, W. Va.—City receives bids until October 2 to curb and pave 29 streets; about 40,400 feet curb and 68,300 square yards paving.

Fort Worth, Tex.—City receives bids until October 6 for 10,000 square yards of vitrified brick or creosoted wood-block pavement.

Petersburg, Va.—City receives bids until October 5 to construct about 4000 square yards creosoted wood-block roadway paving.

Pittsboro, Miss.—Calhoun county has \$8000 available to construct 6½ miles of road.

Wedowee, Ala.—Randolph county will grade, drain and surface with topsoil or gravel part of Wedowee and Roanoke road; expenditure \$8000.

Putting Paving on a Systematic Basis.

New Orleans has just begun work under a new paving law which represents improvement and progress toward the systematizing of city paving work. The essential features of the law are that prior to the first of Septem-

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

NEW STATION AT MEMPHIS.

Illinois Central Will Open Passenger Terminal in Three Weeks.

The Illinois Central Railroad is preparing to open its new passenger station at Memphis on October 21. It is expected that the finishing touches will all be put on the building by October 15. It is located at Calhoun avenue and Main street, and will be called the Grand Central Station. In this connection it is particularly interesting to observe that the completion of the last link of second track on the Illinois Central between Memphis and Chicago will be ready for service early in the month, making double tracks all the way between those cities.

There are five through tracks and five stub tracks, the former being arranged singly so that a platform will be on each side of a train, one for the use of passengers and the other for baggage and express trucks. On the stub tracks the baggage handling is to be concentrated at the ends of the platforms by the use of elevators. All platforms are of concrete, those for through trains being 800 feet long and those for local trains 600 feet.

The station building is 250x150 feet and eight stories high. The lower stories, or those devoted to the purposes of the station, are of Bedford stone, and the upper stories are of red brick and terra-cotta. It is a steel-frame structure. The railroad company's offices are on the upper floors.

Train announcing will be done by a telautophone system which, it is said, will be installed after the opening. This operates by means of trumpets that will be placed in the concourse and in the waiting-rooms.

In connection with the construction of the station six street crossings at grade were eliminated by the elevation of the railroad tracks.

Illinois Central Report.

The annual report of the Illinois Central Railroad for its year ended June 30, 1914, shows railway operating revenues \$65,873,700, increase as compared with the next preceding year \$1,562,797; railway operating expenses \$50,775,327, increase \$726,415; net revenue railway operations \$15,098,372, increase \$866,381; railway operating income after deducting net deficit in outside operations (\$17,650) and railway tax accruals (\$3,341,247) \$11,739,474, increase \$488,626; gross income \$19,060,074, increase \$1,809,875; net income \$8,138,824, increase \$1,563,711; balance to profit and loss \$8,007,181, increase \$1,522,068.

President C. H. Markham says to the stockholders concerning the new financing of the company:

"Since 1890 important additions and betterments to the lines of the Chicago, St. Louis & New Orleans Railroad Co. have been made, and additional lines of railroad south of the Ohio River constructed. None of these expenditures had been financed, and as considerable additional work on these lines was contemplated, it was thought well that the Chicago, St. Louis & New Orleans Railroad Co. should purchase the various railroads and terminal properties south of the Ohio River which has been operated as a part of your company's lines of railroad.

"In furtherance of this plan, the stockholders authorized a mortgage of \$120,000,000, dated December 1, 1913, known as the Illinois Central Railroad Co. and Chicago, St. Louis & New Orleans Railroad Co. joint first refunding mortgage, which covered all the railroads operated by your company south of the Ohio River, and provided for the payment to your company of an amount of bonds at par equal to the cost of the additions and betterments previously made to the Chicago, St. Louis & New Orleans Railroad and for the purchase of the different railroads and terminal properties south of the Ohio River; for the refunding at maturity of all the outstanding bonds on the lines covered by the mortgage and for the reservation of \$36,519,900 of bonds which could be expended under proper restrictions for addi-

tions and betterments to the mortgaged lines. Your company joined in the execution of the bonds secured by this mortgage and as lessee of the mortgaged property participated in the execution of the mortgage so as to make it a first lien on the property.

"As the early part of the current fiscal year was not favorable for the issuance of long-term securities and your company desired to purchase an additional number of freight and passenger train cars, it was decided to purchase the equipment under an equipment lease. Equipment trust certificates aggregating \$3,500,000 dated August 1, 1913, were issued under lease and agreement known as 'Illinois Central equipment trust series B' and were sold to provide in part for funds with which to pay for 3300 freight train cars and 30 passenger train cars. All of this equipment, and in addition such equipment covered by equipment trust series 'A' as had not been received at the end of the previous fiscal year, has been received and placed in service."

Central of Georgia Report.

The nineteenth annual report of the Central of Georgia Railway Co., which covers its fiscal year ended June 30, 1914, shows a good increase in the gross operating revenue as compared with the previous year, but this gain was more than offset by the rise in operating expenses, although the latter was not due so much to increased cost of conducting transportation as it was to maintenance expenditures, principally upon equipment. The total operating revenues were \$14,210,742, increase \$355,870; total operating expenses \$10,745,268, increase \$420,304; net operating revenue \$3,465,473, decrease \$64,433. There was \$216,876 more spent for maintenance of equipment and \$44,410 more spent for maintenance of way and structures than during the next preceding year.

The total net revenue after adding revenue from outside operations was \$3,540,810, decrease \$62,580; operating income after deducting taxes accrued \$2,909,214, decrease \$95,639, because of an increase of over \$33,000 in taxes; gross income \$3,750,805, increase \$19,953, because of an advance of over \$115,000 in income from other sources; net income \$1,091,041, decrease \$132,421, because of an increase of over \$152,000 in the amount of deductions from the gross income. After the payment of dividends on the preferred capital stock there was a balance transferred to the credit of profit and loss of \$191,041, or \$132,421 less than last year.

Substantial improvement was made in the physical condition of the road and its equipment. There were 80 miles of track relaid with new and heavy steel rails, most of it weighing 80 pounds per yard, although some 85-pound and some 90-pound rails were used. Some of the old steel rails taken up were used elsewhere to replace lighter rails, more than 46 miles of line being thus relaid with second-hand, but still good, material. About \$90,000 were expended for tieplates, etc. There were 59 industrial tracks added to the system, besides 24 new sidings. The sum of \$151,988 was expended upon the new gravity yard at Macon. Nearly 6400 linear feet of timber and pile bridges and trestles were replaced with embankments.

The total assets of the company are \$76,424,287, an increase of \$4,578,029, the total cost of road and equipment being placed at \$58,581,050, and the total property investment (including the foregoing) at \$66,131,229.

Baltimore & Ohio Earnings.

The Baltimore & Ohio Railroad's operating revenues during August were \$8,700,376, a decrease of \$928,891 as compared with the same month of last year; the total operating expenses were \$5,933,057, decrease \$693,733; net operating revenue \$2,767,319, decrease \$235,158.

For July and August combined, the first two months of the new fiscal year, the operating revenue was \$16,847,064, decrease as compared with the same period of last year \$1,814,823; total operating expenses \$11,807,725, decrease \$1,199,846; net operating revenue \$5,039,339, decrease \$614,977.

The company adds to its statement, from which these figures are taken, that to accord with the classification of accounts by the Interstate Commerce Commission, effective July 1, the earnings and expenses of items

ler the city must make its plans for all the street paving that is to be done during the succeeding calendar year; after the bids are opened they are published for a month and the property-owners are given an opportunity to petition for the type of pavement that they desire. Thereafter certificates are sold against the assessments for the work and the proceeds of the sale of the certificates are used to pay the contractors.

The assessment proceedings are to be finished before the beginning of the work, thus financing the property-owners' portion and doing away with the troublesome tax lien. The bonds sold in anticipation of the collection of the property-owners' share of cost rest not only for their security on the fund created by the assessment, but are made by law an obligation of the city and given a specific lien against the city's reserve funds. They may be sold as low as 95, thus facilitating their prompt disposal at times when the bond market is below normal. This amounts to making up in advance a plan covering the amount of paving to be done and types of pavements to be laid, as well as the financing of a year's work.

It is provided that bids are to be taken on a great many types of pavements, for which detailed specifications are legalized. These specifications include sheet asphalt, asphaltic concrete, cement concrete, rock asphalt, mineral rubber and wood block. Full competition is provided between all these different types without making the attempt to cover all or any general class of materials or pavements in any one specification. No specifications are "closed" except those describing patented pavements. At the same time this law provides active competition and yet makes a distinction between products of different characteristics and varying prices.

Road Maintenance, the Question.

"Overtopping all other road problems in its importance is that of maintenance," says Logan Waller Page, director of the United States Office of Public Roads and president of the American Highway Association. "The destructive agencies of traffic and the elements are unceasing in their activities, and it is idle to talk of permanent roads any more than to speak of a house, a fence or railroad ties as permanent," says Mr. Page. "The public roads today, by reason of the exceptionally destructive traffic conditions, are more costly in construction, and this is continually increasing with the advance in the prices of labor and material. It is criminally wasteful, therefore, to invest large sums of public money in building the highways demanded by traffic unless the investment is conserved by adequate maintenance. Without such adequate maintenance a road costing anywhere from \$5000 to \$15,000 per mile may go to ruin in a year or two, thus involving a permanent loss of considerable magnitude.

"When it is considered that the aggregate expenditure on roads in the United States is well over \$200,000,000 annually, the seriousness of the question is apparent. I look to the conference of highway officials, which will be held during the Fourth American Road Congress, which meets in Atlanta on November 9, to devote much attention to road maintenance, and that the accumulative moral effect of their findings will go far toward bringing legislatures and county boards to a realization of the necessity for prompt and efficient action. The roads should be classified and suitable maintenance, in organization and money, provided according to the importance of the representative classes of roads."

One of the questions which the congress will discuss is that relating to the revision of road laws. A complete compilation of the road laws of all the States will be available for the session devoted to legislation, and it is expected that in outlining bases for revision, maintenance will be given particular attention.

Contract for Passenger Station.

R. V. LaBarre of Birmingham has been given a contract by the Southern Railway to build a frame passenger depot, with tiled roof, at Hawkinsville, Ga. The new structure, which will take the place of the old station that is to be remodeled for a freight depot, will measure 88x31 feet over all. It will have separate waiting-rooms for white and colored passengers, and all conveniences. Some track changes will be made and paving will be done. Work is to begin immediately, and is to be finished as speedily as possible.

heretofore designated as "outside operation" are distributed through the respective accounts, and that the figures for 1913 have been recast upon the same basis for comparison.

\$50,000,000 BONDS APPROVED.

Only About \$2,400,000 to Be Issued Now by the Mobile & Ohio.

The stockholders of the Mobile & Ohio Railroad Co. have approved its proposed issue of \$50,000,000 of bonds to be issued in series from time to time, as may be required, and at varying rates of interest to meet conditions in the financial markets, the proceeds to be employed for construction and other purposes. As heretofore announced, \$1,200,000 of the bonds will be sold to reimburse the company's treasury for work already done and for purchases of real estate, and about an equal amount for new equipment purchased.

Interesting Railroad Work.

Interesting improvement work on the Cliffside Railroad, near Cliffside, N. C., is illustrated in the accompanying cuts. Figure I shows a barrow from which the base of the big fills is being made. The large stone culvert is 12x12, with forms under construction for the concrete arch 2½ feet thick, 5½ feet (true circle) above



FIG. I.—CLIFFSIDE RAILROAD IMPROVEMENTS.

spring line. The smaller culvert is 8x8, with concrete arch 3½ feet above spring line, and, in addition, there are two emergency pipes of 36 inches to assist the culverts in taking care of the water flow in case of floods, etc.

Figure II shows the trestle at a distance, with the



FIG. II.—CLIFFSIDE RAILROAD IMPROVEMENTS.

culverts practically complete and the base of the fill almost in. At the extreme end of the trestle a derrick with 75-foot boom is shown in action in solid rock barrow, where stone containing from one-half to two cubic

yards are deposited in the base of the fill. This derrick is handling an average of 200 cubic yards per day without the use of a stick of dynamite, mule, cart or car. From 8 to 10 men are required to keep the derrick in operation.

This trestle is 65 feet high and 210 feet long, and 37,500 cubic yards are required to make the fill. As soon as the base of the fill is made the company will probably use a shovel to finish the improvement work and the other forces will be transferred to the extension work to Durham Shoals. R. R. Haynes is president of the Cliffside Railroad; Chas. H. Haynes, treasurer; W. H. Terrell, chief engineer, and L. P. Mason, superintendent.

Greenville & Western Railway.

The Greenville & Western Railway Co., capital \$50,000, has been granted a commission in South Carolina. It succeeds to the property of the Greenville & Knoxville Railway, which is now 23 miles long from Greenville to River Falls, S. C. The incorporators are Thomas Egleston, A. P. Cowles, Asa G. Candler and Joseph A. McCord of Atlanta, and R. A. McTier of Bainbridge, Georgia.

It has long been planned to extend the line to a connection with the Knoxville, Sevierville & Eastern Railway, 30 miles long from Knoxville to Sevierville, Tenn., it being expected that the latter, which was projected and built by W. J. Oliver of Knoxville, would be continued eastward and that the two roads would meet at some point in the mountains west of Brevard, N. C., to which point it was proposed to extend the Greenville & Knoxville line. The title of the new incorporation evidently means that the owners of the property intend to continue construction north and west of River Falls.

New Equipment, Etc.

Southern Pacific Railway and the Atchafalaya, Topeka & Santa Fe Railway have each ordered one locomotive from the Baldwin Locomotive Works, Philadelphia, for exhibition purposes, presumably for the San Francisco exposition next year.

Southern Railway has ordered 3200 tons of rails from the Tennessee Coal, Iron & Railroad Co.

Blue Ridge Railway has ordered a locomotive from Baldwin's; also two passenger cars, one passenger and baggage car and one mail and express car, all of steel construction.

Georgia Railroad is in the market for 500 40-ton box cars.

Baltimore & Ohio Railroad has ordered 1000 tons of rails from the Illinois Steel Co., Chicago.

Lula-Homer Railroad Co., D. G. Zeigler, chief engineer, Lula, Ga., wants prices on rails, splices, spikes, bolts, switches and frogs; also on one 44-foot span steel bridge.

Louisiana Railway & Navigation Co. has ordered 215 tons of bridge steel from the American Bridge Co., New York.

A New Common Carrier.

The Blytheville, Burdette & Mississippi River Railroad, a lumber line having about 46 miles of tracks in Mississippi county, Arkansas, is about to build a one-quarter-mile connection to the St. Louis Southwestern Railway at Blytheville, and will soon thereafter, it is expected, become a common carrier for both freight and passenger service. At present only freight is carried on its trains. The road is owned by the Three States Lumber Co. of Burdette, Ark., of which F. W. Gilchrist of Alpena, Mich., is president, and W. A. Gilchrist of Memphis, Tenn., is vice-president. C. W. Rainey of Burdette is superintendent of the line.

Completing a \$500,000 Sawmill.

In November the Marathon Lumber Co., Laurel, Miss., expects to begin sawing in its big mill heretofore fully described. The fireproof buildings and the machinery will represent an investment of approximately \$500,000, the capacity to be 200,000 feet of lumber in 10 hours. The construction engineer for this plant is the D. J. Murray Manufacturing Co. of Wausau, Wis.

MINING

MINING ACTIVITY IN VIRGINIA.

Increased Mineral Production of 1913 Shows Total Value of Over \$17,000,000.

The mineral production of Virginia increased in value from \$14,995,842 in 1912 to \$17,178,580 in 1913, according to the United States Geological Survey.

Virginia ranks relatively high among the States in the variety of mineral substances produced on a commercial scale, but somewhat low on the list in the value of the production. Virginia is the leading State in the production of iron pyrite used in the manufacture of sulphuric acid, and in the production of manganese ore, and is the only State in which rutile is produced. It also ranks first in the production of soapstone, most of which is manufactured before being marketed into heat and chemical resisting articles, such as hearthstones, mantels, griddles, sinks, etc.

The product of chief value, however, in the State is coal, which represents something more than 50 per cent. of the total value of the mineral production. The production in 1913 amounted to 8,828,068 tons, valued at \$8,952,653, against 7,846,638 tons, valued at \$7,518,576 in 1912, an increase of nearly a million tons.

Virginia's production of pig-iron, the value of which is not included in the total mineral production, amounted in 1913 to 380,508 long tons, valued at \$5,310,167, compared with 328,961 tons, valued at \$4,364,708, in 1912. The production of coke, whose value is also excluded from the total, increased from 967,947 short tons, valued at \$1,815,975, to 1,303,603 tons, valued at \$2,840,275. The value of clay products in 1913, exclusive of pottery, amounted to \$1,705,651.

Third in importance among the primary mineral products of the State is stone, of which the chief varieties quarried are granite and limestone.

The total value of the quarry products of Virginia increased from \$877,746 in 1912 to \$1,063,782 in 1913.

In the production of iron pyrite Virginia accounted for nearly 50 per cent. of the total production of the United States in 1912 and 1913, the figures for 1913 being 148,259 tons, valued at \$587,041.

The soapstone, including talc, production, in which Virginia also ranks first, amounted to 26,487 short tons, valued at \$615,558, in 1913, against 25,313 tons, valued at \$576,473, in 1912.

In the total value of commercial mineral waters sold Virginia ranks sixth among the States, producing 2,873,288 gallons in 1913, valued at \$208,473.

Virginia also produces asbestos, barytes, cement, copper, feldspar, occasional gems, gold, gypsum, infusorial earth, mica, millstones, mineral paints, salt, sand and gravel, silver, slate and zinc.

A \$2,000,000 Coal Mining Company.

Capitalized at \$2,000,000, the Wetzel Coal & Coke Co. of Fairmont, W. Va., plans to develop 19,250 acres of coal land in Wetzel county. This corporation has been chartered by Josiah V. Thompson, Chas. H. Gorley, Frank H. Kosboro, Robt. Powell and Margaret J. McClelland, all of Uniontown, Pa.

Daily Output to Be 1000 Tons.

A daily output of 1000 tons of coal is proposed by the Big Eagle Mining Co., Ottawa, W. Va. This company will develop 500 acres of coal land, and it wants prices on hoisting and screening machinery. It has organized with officers as follows: J. M. Moore, president and treasurer; A. M. Rogers, vice-president; James Clark, secretary and manager.

To Mine Virginia Manganese.

For the purpose of developing manganese property in Shenandoah county, Virginia, the Crimora Manganese Corporation has been chartered with \$1,000,000 capital stock. John H. Brooks of New York is president, and John H. Hurlburt of Stamford, Conn., is secretary-treasurer.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

Southern Spindles and Looms.

There was little activity during the third quarter of the year in plans for new Southern cotton mills. But while only two new companies were organized, six established enterprises for the production of cotton goods announced decisions to add to their manufacturing facilities. These six companies arranged for additional ma-

Name.	Alabama.	Location.	Spindles.	Looms.
*Belle Francis Cotton Mills.....	.....	Alexander City.....	2,528	....
*Grantville Hosiery Mills.....	Georgia.	Grantville	5,000	....
Kentucky Yarn Co.....	Kentucky.	Louisville .....	....	....
*Granite Falls Manufacturing Co.....	North Carolina.	Granite Falls.....	800	....
*Mayes Manufacturing Co.....	.....	Mayesville	4,000	....
			4,800	....
Palmetto Manufacturing Co.....	South Carolina.	Anderson .....	....	....
*Banna Manufacturing Co.....	.....	Goldville	4,096	96
*Eureka Cotton Mills.....	Tennessee.	Englewood	3,300	....
			19,724	96
Total for first quarter of 1914.....			75,703	954
Total for second quarter of 1914.....			102,484	1,016
Total for third quarter of 1914.....			19,724	96
Total for nine months of 1914.....			197,911	2,065

*Established mills enlarging.

chinery to the extent of 19,724 spindles and 96 looms, requiring an investment of approximately \$500,000, the new equipments being mainly for the manufacture of various kinds of cotton yarn. Adding these figures to the results reported for the first two quarters of 1914, it is seen that the nine months of this year total 197,911 spindles and 2066 looms, about \$5,000,000 representing the investment.

Construction has continued on plants heretofore announced, including the following: National Yarn Mills, Belmont, N. C., capitalized at \$200,000, to have 13,000 spindles; Flint Manufacturing Co., Gastonia, N. C., to build 11,500-spindle addition; Clinchfield Manufacturing Co., Marion, N. C., capitalized at \$500,000, to have 20,000 spindles and 600 looms; Revolution Cotton Mills, Greensboro, N. C., to build \$1,000,000 addition for 40,000 spindles and 1100 looms; Swift Spinning Mills, Columbus, Ga., to build 13,000-spindle addition.

Announcements for the months of July, August and September are summarized in the accompanying table.

DEPRESSION WEARING OFF.

Cotton Mill Operations as a Solution of Cotton Ills.

In reference to a material and positive advance in the price of cotton in the Southern markets recently, Mr. G. Gunby Jordan of Columbus, Ga., says:

"Naturally enough, the domestic mills are making some of this advance, but I take it for granted that all through this section the shippers, who have sold themselves short, are putting the market up on one another, and that possibly after the 15th of October, when notes mature and when the deliveries have been made that are now pressing the cotton shippers, there will be a softening tendency in the price. We can but hope, however, that the advance is permanent. It will help trade and instill new confidence both in the farmers and the mills alike.

"I have never seen the fields whither with cotton, nor such apathy in picking; largely, possibly, because the owners of the fields have so little idle money to get outside or city and town help. So the home folks are doing the picking, and doing it in a listless sort of way, it appears to me. It would be a pity if the usual equi-

noctial weather should knock out much of this beautiful open cotton, and thus make the grades much lower than they are entitled to be.

"In answer to your query, I think things are getting better, all in all. In my opinion, the original pessimistic depression is wearing off. Under the last call that the Comptroller made the bank statements showed that the banks were really stronger than they thought they were.

"I believe that the emergency currency desire has mitigated somewhat, as it is found that commodities like cotton and its products are quite low, and it does not require so much money in the South to move the crop.

"If trade were sufficiently revived to insure full operations to the cotton mills in the United States it would be the best solution of the cotton ills. This, with a certain amount of export business and the generous assistance of the banks, coupled with the farmers' own action in planting food and supply stuffs the next crop will solve most of the trouble.

"This untoward event of the European war has done

ter, a member of the Federal Horticultural Board, Washington.

"Proposed Restrictions Upon the Importation of Egyptian Cotton on Account of the Pink Boll-Worm," by C. J. H. Woodbury, Boston, Mass., secretary of the association.

To Help the Mills.

The management of the Augusta-Aiken Railway and Electric Corporation, operating in Georgia and South Carolina, in its desire to co-operate with the cotton mills in its territory, has offered the services of its local or New York organizations in obtaining additional labor where required for the manning of the mills. This offer is made in the expectation that American mills will sooner or later be called upon to supply with cotton goods markets which have been largely controlled by European mills.

Textile Notes.

Chamber of Commerce, Little Rock, Ark., is interested in a plan for organizing a \$500,000 company to build a cotton mill.

Merchants and Manufacturers' Association, Harry A. Olmsted, president, Dallas, Tex., plans the organization of a company to build a cotton mill.

A. M. Walker, P. O. Box 323, San Antonio, Tex., contemplates establishing a hosiery knitting mill, and wants to correspond with manufacturers of the necessary machinery.

H. W. Reese Woolen Co., Louisville, Ky., has organized with officers as follows: Fred A. Reese, president; August Weidling, first vice-president; John W. Diecks, second vice-president; E. Drevenstidt, secretary-treasurer. This company was reported last week as incorporated with \$50,000 capital stock.

Demands for absorbent cotton for bandages are so large that the Aseptic Cotton Products Co. of Chaitanooga is operating its mill day and night. This company is said to have recently declined orders for more than 200,000 pounds of its absorbent cotton, and that it could readily dispose of four or five times its present capacity.

It is stated that the 16 cotton mills of the Parker Mills Co., Greenville, S. C., have resumed full time operations, and that two of them, with 46,000 spindles, are operating day and night, all these mills employing about 5000 operatives and each month consuming from 5000 to 6000 bales of cotton. About 550,000 spindles, with accompanying looms, is the total equipment of the Parker mills.

To Represent American Manufacturers.

Hermann Gagstatter, 4a, Calle Tacuba 42, Mexico City, writes to the MANUFACTURERS RECORD as follows:

"I am a commission merchant and interested in American products, and am looking for some more representations of American firms. If you know of important firms that are willing to do business with Mexico as soon as the situation of the country improves, I would thank you if you will mention my name to same. All references of American firms are at the disposal of firms who will entrust me with their representation."

I. Abraham, the head of a St. Louis firm which is one of the largest exporters of furs in the United States, estimates that about 25,000,000 fur-bearing animals were caught in North America last year, whose pelts were valued at \$20,000,000.

The Chilton Mining & Manufacturing Co., C. W. Bell, president, informs the MANUFACTURERS RECORD that it will begin shipping brown ore from its mines at Mountain Creek, Ala., on October 10.

The Proceedings of the Sixth Annual Meeting of the West Virginia Branch of the American Poultry Association constitute the latest report of the West Virginia Department of Agriculture.

New England Cotton Mill Men.

Following the address of President Albert G. Duncan, the program of the semi-annual meeting of the National Association of Cotton Manufacturers at Lenox, Mass., this week includes:

"Cotton Textile Commerce With South America," by Charles T. Plunkett, president, Greylock Mills, Adams, Mass.

"Textiles on the Hooghly," by Albert Farwell Bemis, Boston, Mass.

"The Production and Preparation of Raw Cotton for the Spinner," by A. M. Allen, vice-president and general manager, Modern Gin & Compress Co., Little Rock, Ark.

"Weft Yarn Inspection," by Frederick H. Bishop, general manager, Universal Winding Co., Boston, Mass.

"Beam Dyeing," by John Brandwood, managing director, the Elton Cop Dyeing Co., Bury, England.

"Provisions for the Health of Employees," by William Hall Coon, M.D., Haverhill, Mass.

"The Effect of Structure on the Strength and Wearing Qualities of Cloth," by William Myers, British Association of Managers of Textile Works, Acresfield, Gatley, Cheshire, England.

"The World's Demand for Cotton and India's Part in Meeting It," by Arno Schmidt, secretary, International Federation of Master Cotton Spinners' and Manufacturers' Associations, Manchester, England.

"The Value of Trademarks in Cotton Textiles," by Henry C. Thomson, Boston, Mass.

"Cost of the Permanent Fireproofing of Cotton Goods," by J. E. Tod, Manchester, England.

"Time Temperature Distributions in a Bale of Cotton," United States Bureau of Standards, Washington, D. C.

"Importance of the Pink Boll-Worm," by W. D. Hun-

America's Opportunity

There is probably no higher economic authority living than Sir George Paish, Editor of the Statist, London. In discussing the economic phase of the war he said:

A great war in Europe will probably bring economic advantages to the United States. It will enable it to sell its great crops in places which will give a much greater income than if there was no war.

Almost every industry will derive more or less advantage. American investors and bankers should get in much profit from the ability to buy back from Europe great quantities of securities at attractive prices in payment for the foodstuffs and raw material exported from the United States.

The United States can become, as it has this week, the world's greatest market for capital.

For the United States to gain benefit from the position as the wealthiest nation in the world it is essential that American investors should not only have confidence in the future of their own country, but also believe that, war or no war, the world will continue to progress.

In brief, a great war in Europe will give the United States an opportunity of assuming the post of world banker by supplying capital freely to countries and individuals in all parts of the globe who need it and can provide the required security. Should the American people take advantage of the golden opportunity afforded them by the outbreak of war, it will mean, not diminished, but increased prosperity for the United States.

Now is the time for the real men of this Country to show their faith in themselves and in the Country and in our business possibilities.

The faint-hearted, affrighted by shadows, rush to cancel orders. They are afraid of themselves and of their ability to win victory from disadvantages. They become burden shirkers at the first moment possible. If everybody followed their lead, the country would go tobogganing down to ruin headlong.

But

There are other red-blooded men and red-blooded corporations that are not frightened by every storm. They stand by their contracts to the utmost limit of ability, even if to do so does involve temporary loss. They are builders, upbuilders, burden bearers, and they save the country and themselves by their backbone and courage.

This is a time for doing things—a time to run up your flag instead of hauling it down—a time to get your share of all the business going—a time to let the world know you are not frightened out of your boots, and that you are in business to stay.

How?

Push your business; advertise it. Tell the world you are not "gun shy" and that you will always be found moving forward and not turning tail, running away from the contest.

Where!

Advertise in the Manufacturers Record, and also elsewhere if you want to, BUT ADVERTISE. The Manufacturers Record has never lost faith, never stopped working for the country's upbuilding, and it invites you to join the front ranks of America's best business houses. The greater the difficulties, the greater the energy it puts forth.

MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

ASPHALT REFINING AT BALTIMORE.

Great Development of a Plant Handling Product of a Mexican Oil Field.

During the past five years the asphalt industry has undergone many changes and has grown with marked rapidity, as the demand for asphalt for modern highways has expanded and its use for other purposes has increased. Asphalt has been increasingly employed in roofing and waterproofing, in mastic floors, for insulating, pipe dip and in the manufacture of rubber, paints and varnishes, etc.

The development of this industry has been facilitated by the discovery and development of important deposits of raw material that, when properly refined, produce a material containing all the essential qualities of the highest grade of asphalt and which can be sold at a comparatively low price for the construction of high-grade pavements.

The United States Asphalt Refining Co., with main offices at 90 West

Tampico 100,000 barrels of oil, 35,000 of which were discharged at the company's plant at Carteret, N. J., and 65,000 barrels at Baltimore, this being the greatest cargo of oil that ever came to the port of Baltimore. The oil is taken from the large steamers by means of powerful pumps which discharge 2000 to 2500 barrels per hour from the steamer to the storage tanks.

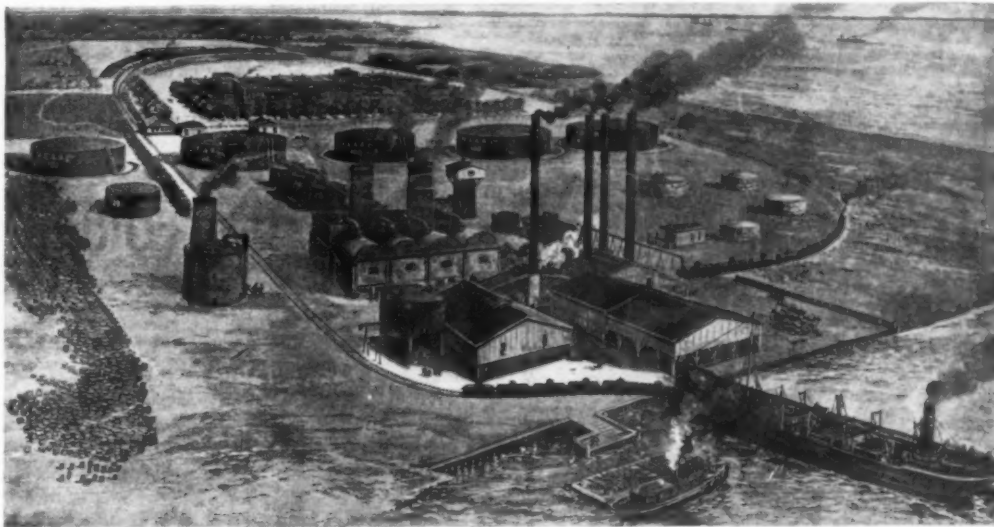
At the big Baltimore refinery special methods are followed for refining Aztec asphalt, and the greatest care is taken to produce a material that is uniform and will retain all the essential qualities that nature gave it. This refinery is equipped with all of the latest devices of science, and with appliances especially designed to secure control of the refining process. Aztec asphalt is refined to whatever consistency may be required to meet the conditions for which it may be used, and it is

tions on the American continent. It has the advantage of withstanding the cold in far Northern cities and the heat in Southern cities, and that of motor cars on country roads.

In the Borough of Manhattan, New York city, it was used on 72d street, between West End avenue and Columbus avenue; 38th street, between Broadway and Sixth avenue; 40th street, between Broadway and Seventh avenue; the east and west sides of Gramercy Park and on Fifth avenue, between 25th and 34th streets, where the traffic is especially heavy.

About 30 miles of pavements have been constructed with Aztec asphalt in Philadelphia during the past few years, and in Pittsburgh nearly three miles of asphalt of surfacing was done with Aztec during 1913. Other prominent cities where Aztec has been used include Baltimore, Buffalo, Providence, Chester, Scranton, Detroit and Newark. It has been laid extensively on the great highways of New York, Pennsylvania and New Jersey. Aztec asphalt has also made great progress in the Southern States, and has been used in Atlanta, Baltimore, Washington, Portsmouth, Raleigh, Richmond, Ginter Park, Greensboro, Birmingham, Jacksonville, Norfolk, Columbia, Charleston, Charlotte, Henderson, Concord, Rocky Mount, Greenwood, Lumberton and Laurinburg.

Altogether more than 3,000,000 square yards of streets and roadways have been constructed during



General View United States Asphalt Refining Plant, East Brooklyn, Md.



Company's Steamship, Capacity 100,000 Barrels of Oil.



Train of Tank Cars Leaving the Refinery at East Brooklyn.

street, New York city, is one of the concerns that has built up an important business in the development of Mexican asphaltic oil, and, notwithstanding the political disturbances that have continued in Mexico and the various encounters of the opposing forces in the vicinity of Tampico and the oil-well region, it has continued to receive increased cargoes of crude oil at its refining plant at East Brooklyn, near Baltimore, Md.

This plant is one of the most interesting Baltimore industries. It occupies a tract of 105 acres facing the deepest water front of Baltimore's harbor on Curtis Bay, and the output of its various asphalt and oil products has steadily increased with the growing demand for road-building materials, road oils, distillates, gasoline, etc. Storage tanks and refining equipment have been added from time to time to meet this expanding demand, until now the storage capacity for receiving oil from steamers is 500,000 barrels of crude oil, which is refined and the products shipped to all sections of the country as far west as the western limits of the Mississippi valley.

The accompanying illustration gives some idea of the extent of this plant. No photograph could take in all of the company's facilities at this point.

The company owns quite an extensive fleet of large steamers, which ply between this refining plant and the Tampico oil field, and another illustration shows the big steamer San Jeronimo, which recently brought from

not necessary to add other oils to enable it to be used with the best results for the various types of paving construction, such as with asphalt, asphaltic concrete or asphalt macadam, and for the various patented pavements.

One of the principal features of the oil from the Tampico and Tuxpan wells lies in the large percentage of asphaltic base from which the high quality of road asphalts and binders results in the refining processes. This Mexican oil is claimed to possess 50 per cent. asphaltic base. As a result, the road asphalts and binders are economically obtained in the distillation.

It is stated that 150,000 tons of asphalt were produced in 1912, and the output has greatly increased since that time. It is expected that the production of distillates, gas and fuel oils this year will be over 100,000,000 gallons.

The company owns concessions of oil wells, leases others and has a prospecting and well-digging force constantly developing new wells in Mexico, so that its future plans include still greater developments.

Baltimore's advantages of good water frontage, attractive freight rates and labor conditions combine to make this the principal plant of the company. Another refinery is located at Carteret, N. J., and one is also being established at Chester, Pa.

Aztec asphalt has been laid in street pavements and roadways in many of the most important cities and sec-

the past two years with Aztec asphalt. The United States Asphalt Refining Co. also manufactures Aztec liquid asphalt for treating and preserving roadways. This material, it is claimed, is a truly asphaltic oil of a certain gravity, and with all of the components that nature gave it, and one application will keep the road in proper condition during an entire season. It is also claimed for Aztec liquid asphalt that it flows freely at low temperatures and has a light volatile element which causes it to penetrate thoroughly a roadway surface. This volatile element quickly evaporates, leaving a hard residue which binds the road and makes the surface closely resembling a regular asphalt pavement. It has been used with successful results on slag, gravel and sand roads, as well as macadam.

The United States Asphalt Refining Co. has issued an illustrated catalogue which discusses the various features of Aztec asphalt and Aztec liquid asphalt, and the application for road and street building and improvement. Analyses of the various products are also given to show their high quality.

The company's products for road and street building are handled by the asphalt and road department, of which J. R. Draney is general sales manager, with offices at 90 West street, New York city. Southern sales are handled at the Norfolk, Va., office, of which Geo. B. McGrath is sales manager.

New Life-Saving Inventions Adopted by United States Navy.

The United States Navy Department, after tests extending over many months, has adopted the new Universal type of life preservers invented and patented by Lieut. S. P. Edmonds, United State Revenue Cutter Service, retired, and illustrated some months ago in the MANUFACTURERS RECORD. Under date of August 10 the Navy Department wrote to the Secretary of the Treasury in regard to this life preserver, and in the course of the letter said:

"Lieut. Samuel P. Edmonds, United States Revenue Cutter Service, retired, has tendered to this Department the privilege of making for use on naval vessels life preserving equipment covered by letters patent.

"The pillow type of kapok life preserver manufactured in accordance with his patent has been tested extensively for vessels of the Navy, and it is believed to be superior to the present standard cork life jacket. It has accordingly been approved for the naval service."

In this letter the Department expressed its appreciation of the public spirit of the inventor in giving to the Navy the free use of this and other life-saving inventions, and the Treasury Department in a letter to the inventor, referring to the fact that the same privilege had been given to the Revenue Cutter Service, said:

"The Department desires to express to you its appreciation of the public spirit which actuated you in ac-

cording this privilege to the Revenue Cutter Service, and is pleased to note that an officer of this service has been instrumental in devising a life preserver which it is believed will be in times of disaster instrumental in saving human life."

At the recent investigation in Quebec of the loss of the steamship Empress of Ireland, attention was called to the fact that many persons were found dead shortly after the vessel sank, clear of the vessel with life belts on, but their heads under the water. It was stated at



CUT No. 1.

the time to Lord Mersey, who had charge of the investigation, that the Universal type of life preserver would have avoided this situation, as it holds the head out of water even when the wearer may be unconscious from cold, exposure or exhaustion. As a result of this situation the London Board of Trade since Lord Mersey's return to London has been investigating the advantages of this life preserver and other life-preserving equipment invented by Lieutenant Edmonds, and prob-



CUT No. 2.



CUT No. 3.

ably with the same thoroughness that was given to the investigation by the Navy Department which led to its action.

The Robinson-Rodgers Company, Newark, N. J., one of the largest pillow and mattress manufacturing concerns in the country, and direct importer of Java kapok, has become interested in the manufacture and the marketing of these life preservers and live-saving mattresses,

and has established under the direction of Lieutenant Edmonds a department devoted to the manufacture of these various live-saving inventions.

Quite a demand has been created for a specially designed life preserver manufactured under these patents for aviators who are exposed to the danger of falling into the water, and the accompanying cut No. 1 shows how these aviator life preservers are strapped on in advance to be prepared for emergencies. Cut No. 2 shows how a life preserver in the form of a pillow is slipped over the head almost instantly, and is so easily handled that a child can quickly adjust it, and cut No. 3 shows how this pillow or Universal life preserver holds the head out of water.

The various inventions which are now being manufactured consist of patented pillows, mattresses and ship life preservers. The life preservers are made in many sizes, and are as valuable on motor boats and pleasure craft generally as for naval uses and for the larger river and ocean passenger steamers. Not until months of thorough investigation had been given to the merits of these Universal life preservers did the Navy Department adopt them in preference to the present cork jackets, thus putting its stamp of approval upon this system.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Wanted for Nicaraguan Trade.

B. Singer, Nicaraguan Consul, 29 S. La Salle street, Chicago, writes to the MANUFACTURERS RECORD as follows:

"We have received an inquiry from a large and responsible concern requesting us to obtain quotations from the leading manufacturers of incandescent gas mantles for upright and inverted burners; burners for coal, air, acetylene and other gas in upright and inverted; ovens, grillers, cookers, fires, etc., for use on coal and air gas; gas fittings of all descriptions; electrical incandescent lamps; electrical fittings; electric irons and all other electric appliances for household use. The standing of the firm asking for these goods is beyond question, and firms doing business with them can rely that any obligations they enter into will be carried out to the letter."

Wanted for Canadian Trade.

Alexander Gibb, 3 St. Nicholas street, Montreal, Canada, writes to the MANUFACTURERS RECORD as follows:

"I represent American manufacturers, and have been in business since 1897 as a manufacturers' agent selling goods on commission. My business is principally with wholesale jobbers, but I also do business with manufacturers and railway companies. I am interested in almost any line that can be sold to advantage in Canada. So far I have not done any business in machinery. I shall be glad if you can put a notice in your paper, and will be pleased to reply to any manufacturer who may write me. If I am not able to do anything with their particular lines I will do what I can to put them in touch with someone that can do so to advantage."

Acid-Resisting Bricks.

Power Gas Corporation, Ltd., Stockton-on-Tees, England, writes to the MANUFACTURERS RECORD as follows:

"We shall be glad to learn from you the names and addresses of manufacturers of acid-resisting bricks. These bricks are for paving the floors and facing the walls of a building in which sulphuric acid will be worked. There are several makers in Great Britain, but we cannot trace any in America; yet we feel sure there must be, if we can only get in touch with them. We shall require a quantity for a plant which will be built in America after the war is over."

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ark., Amity.—Clark County Commrs., Arkadelphia, Ark., let contract Vincennes Bridge Co., Vincennes, Ind., at \$11,970 to construct bridge across Caddo River near Amity; 3 spans of 130 ft. each; steel construction.

Fla., Jacksonville.—City will construct reinforced concrete bridge on Main St. over Hogans Creek; bids until Oct. 6; Geo. M. Powell, Chrmn. Comm. on Public Works, Board of Bond Trustees. (See Machinery Wanted.)

Ga., Dalton.—Whitfield county bridge will be of steel and concrete construction; one 40-ft. and two 25-ft. spans; 12-ft. roadway. (Board of Roads and Revenue, H. J. Wood, Ordinary and Chrmn., lately noted to receive bids until Oct. 6.)

Ga., Rome.—Floyd county will construct concrete bridge over Armuchee Creek on Summerville Rd.; bids until Oct. 19; Kiefer Lindsey, County Engr.; J. G. Pollock, Chrmn. (See Machinery Wanted.)

Ga., Watkinsonville.—Oconee county will build Malcom bridge, 5 beam spans at 21 ft., 1 beam span at 36 ft., 1 bent at 6 ft. and 2 bents at 7 ft. 6 in.; Burt Factory bridge, 2 spans at 16 ft., 1 span at 20 ft., 1 bent at 7 ft. 6 in., 1 bent at 6 ft. and 1 truss span at 60 ft.; Daniel bridge, 6 spans at 16 ft., 1 span at 20 ft., 1 span at 35 ft. 6 in., 3 bents at 7 ft. and 2 bents at 9 ft.; receives bids for steel until Oct. 12; F. R. Booth, Ordinary. (See Machinery Wanted.)

Ky., Louisville.—Louisville Bridge Co., Jas. J. Morris, Secy., Realty Bldg., plans to rebuild bridge across Ohio River within 1 or 2 years; plans not definite. (Previously noted.)

La., New Orleans.—City will construct Strauss trunnion bascule lift bridge over New Basin Canal on axis of City Park Ave.; bids until Oct. 26; A. G. Ricks, Commr. (See Machinery Wanted.)

Miss., Tupelo.—Lee county will construct about 11 bridges, lengthen bridge in Garrett Creek Bottom on Aberdeen and Ripley Rd. and construct levee on Factory Branch Bottom on Baldwin and Mariette Rd.; let contract Oct. 5; B. F. Parker, Prest. Board of Suprs. (See Machinery Wanted.)

N. C., Danbury.—Stokes County Commrs. let contract R. R. King of Danbury at \$5423

to construct bridge across Buffalo Creek between Germanton and Walnut Cove and one across Neatman Creek between Germanton and Ross' store; also repair bridge across Town Fork at Germanton.

N. C., Lillington.—Central Carolina R. R. W. J. Edwards, Prest., will build one 3-span and one 2-span bridges in connection with 125-mi. railway from Lillington to Swansboro.

N. C., Winston-Salem.—Forsyth County Commrs., Winston-Salem, and Yadkin County Commrs., Yadkinville, let contract Vincennes Bridge Co., Vincennes, Ind., at \$23,349 to construct bridge across Yadkin River at Conrad's Ferry; steel construction; length 390 ft.; 3 piers of solid concrete on river part and remaining piers of steel filled with concrete; all piers to solid rock; abutment of solid concrete; spans, beginning on Forsyth county side, as follows: 85-ft. pony span, riveted; two 130-ft. and 1-in. spans; five 100-ft. through riveted spans; live-load capacity, 80 lbs. to sq. ft. floor space or 15-ton road roller; J. N. Ambler, Consult. Engr., Winston-Salem, designed masonry and superstructure; E. T. Mickey, Chrmn. Bridge Comm. (Lately noted.)

Okl., Enid.—Garfield County Commrs. let contract Monarch Bridge Co. at \$3709 to construct 3 bridges and repair various others.

Tenn., Knoxville.—City Com. received report of J. Boyd McCalla, City Engr., recommending construction of concrete viaduct across First Creek and E. Clinch Ave.; estimated cost \$6000.

Tex., Beeville.—Bee County Commrs. let contracts aggregating \$13,898 to construct 3 bridges, replacing structures washed away during August floods; Alamo Construction Co. of San Antonio at \$1950, Corpus Christi St. bridge, located in Beeville over Paesta; concrete overflow structure, constructed so as to allow high water to flow over top as freely as through waterway; height 7 ft., length 60 ft., width 16 ft.; Austin Bros. of Dallas at \$6348, bridge on Beeville-Skidmore Rd. over Aransas Creek, 2 mi. north of Skidmore; concrete and steel construction; height 15 ft.; El Paso Bridge Co., El Paso, at \$5600, bridge over Aransas Creek on Skidmore-Corrigan Ranch Rd.; length 380 ft., with two 125-ft. spans, one 60-ft. span and one 70-ft. span.

Tex., Centerville.—Leon county will construct system of bridges, culverts and roads in Oakwoods Dist.; Consult. Engrs., Browne & Wilder, Navasota; L. T. Dashiell, County Judge. (See Road and Street Work.)

Tex., Cameron.—Road Dist. No. 2 will expend \$20,000 to construct 36 small bridges from 12 to 50 ft. long; steel except wood door; let contract Austin Bros. of Dallas at \$11,365.50 to construct various bridges; J. C. Field Engineering Co., Engr., Cameron and Denison, Tex. (Lately noted to receive bids until Sept. 24.)

Tex., Denison.—City Commrs. rejected bids to construct 6-ft. walkway bridge estimated to cost \$12,500, and contemplates constructing viaduct for vehicles estimated to cost \$45,000; viaduct to be built across shops and tracks of Missouri, Kansas & Texas Ry. and tracks of Houston & Texas Central R. R. A. B. Clenny, City Engr. (Lately noted.)

Tex., Fredericksburg.—Gillespie County Commrs. will expend \$2500 to \$3000 to construct low-water bridge; 280x20 ft.; Herman Usener, County Clerk. (Lately noted to receive bids until Oct. 3.)

CANNING AND PACKING PLANTS

Ark., Greenwood.—M. J. Irvin and John M. Irvin are promoting establishment of cannery.

Ark., Rogers.—Jones Bros. & Co. increased capital stock from \$400,000 to \$1,000,000.

Fla., Dade City.—J. T. Futch will build packing plant.

Fla., Orlando.—Eola Packing Co. leased building at Concord Ave. and Atlantic Coast Line R. R.; will convert into packing plant; ordered machinery.

Ky., Owensboro.—Lane Ice & Packing Co., capital stock \$5000, inceptd. by T. T. Lane, Jno. W. Lane and Chas. Akin.

Md., Crisfield.—McMemamin Co., Hampton, Va., is reported to build crab cannery.

S. C., Anderson.—Porter A. Whaley, Secy. Anderson Chamber of Commerce, is reported to have announced that plans have been perfected to build beef and pork-packing plant.

CLAYWORKING PLANTS

Ga., Mission Ridge (not a postoffice).—Firebricks, etc.—Southern Refractory Co. organized by W. L. Greely of New York, W. M. Barker, lately of Clarksdale, Ark., and others; purchased property of Southern Clay Products Co. at Mission Ridge and will rehabilitate plant. Mr. Barker will remain in Chattanooga, Tenn., as manager.

N. C., High Point.—Roofing Tile.—High Point Roofing Tile Co. organized; W. F. Norman, Prest.; R. R. Ragan, V.-P.; Levi J. Hayworth, Secy.-Treas.; operate plant to mfr. cement tile roofing; has plant and equipment. (Lately noted inceptd., \$25,000 capital.)

COAL MINES AND COKE OVENS

Ala., Birmingham.—Wadsworth Cahaba Coal Co., capital \$5000, inceptd. by W. C. Beck, Prest.; L. E. Patton, V.-P. and Treas.; Paul Lanier, Secy.

Ky., Sebree.—A. R. Cobb and C. M. Melton are interested in developing coal mine.

Ky., Viper.—R. T. Peters, Whitesburg, Ky., is reported to develop coal mines.

Tenn., Jacksboro.—Clairfield Jellico Coal Co., capital \$15,000, inceptd. by P. E. Bennett, J. P. Gorman, R. A. Baird and others.

W. Va., Clarksburg.—J. E. Long Coal Co., capital stock \$10,000, inceptd. by J. Edgar Long, D. D. Britt, Thos. P. Keenan and others.

W. Va., Fairmont.—Wetzel Coal & Coke Co., capital stock \$2,000,000, inceptd. by Josiah V. Thompson, Chas. H. Gorley, Frank H. Kosboro and others, all of Uniontown, Pa.; will develop 19,250 acres Wetzel county coal land.

W. Va., Heberton (not a postoffice).—Hills Branch Coal Co., capital stock \$50,000, inceptd. by Thos. K. Laing, M. P. Laing, L. E. Hiner, Geo. W. Wallace and R. M. French, all of Beckley, W. Va.

W. Va., Ottawa.—Big Eagle Mining Co. organized; J. M. Moore, Prest.; A. M. Rogers, V.-P.; Jas. Clark, Secy.-Mgr.; J. M. Moore, Treas.; develop 500 acres coal land; daily capacity 1000 tons coal; install hoisting and screening machinery; date of open-

ing bids not determined; lately noted incorporated, \$25,000 capital. (See Machinery Wanted.)

COTTON COMPRESSES AND GINS

Ark., Calico Rock.—W. L. Garner will install gin.

Ga., Reynolds.—Ricks Bros. will rebuild gin reported burned at estimated loss of \$7000.

COTTONSEED-OIL MILLS

Okl., Guthrie.—John Dean and others acquired Empire Seed Oil Mill and will remodel.

DRAINAGE SYSTEMS

Ark., Wynne.—Drainage Dist. No. 3 will construct drainage canals; W. H. Newsom, Engr., receives bids until Oct. 12 for about 235 cu. yds. floating dredge work, to be let in four contracts as follows: No. 1, 22.4 mi. of 14-ft. bottom, 2.5 mi. of 20-ft. bottom, total yardage, 615,000; No. 2, 15.7 mi. of 14-in. bottom, total yardage, 590,000; No. 3, 5.2 mi. of 16-ft. bottom, 3 mi. 24-ft. bottom, 8 mi. 30-ft. bottom, 4 mi. 60-ft. bottom, total yardage, 840,000; No. 4, 12 mi. 14-ft. bottom, total yardage, 280,000.

Fla., Titusville.—Upper St. Johns Drainage Dist. has been established by court decree; will organize and elect board of supervisors; embraces 265,000 acres in valley of St. Johns River in Brevard, Orange and Osceola counties; includes basins of Lakes Poinsett, Winder and Washington. (Report on project by Isham Randolph & Co., Engrs., Chicago and Jacksonville, and additional facts previously noted.)

Miss., Ripley.—Telahatchie Drainage Dist. No. 1 of Tippah County let contract to N. C. McGinnis Co., Memphis, Tenn., to construct drainage canal; channel 14 ft. wide, 8 ft. at bottom, 7 ft. deep; dredgeboat construction; drain 539 acres for agricultural purposes. (Lately noted.)

Mo., Elsberry.—Elsberry Drainage Dist. will install steam-driven pumping plant containing two 48-in. centrifugal pumps, each to have normal capacity of 50,000 gals. per min. and maximum capacity of 74,000 gals. per min. against maximum static head of 14 ft.; also construct reinforced concrete sluiceway; Board of Suprs. receives bids until Oct. 24; for further information address Harman Engineering Co., Peoria, Ill. (See Machinery Wanted.)

N. C., Salisbury.—Commrs. Sills Creek Drainage Dist., S. M. Hart, Secy., Mt. Ulla, N. C., will issue \$18,000 bonds to construct drainage system; C. M. Miller, Engr. and Supt., Salisbury. (Lately noted to receive bids until Oct. 3.)

N. C., Salisbury.—Commrs. Kerr Creek Drainage Dist., W. M. Erwin, Secy., will issue \$12,000 bonds to construct drainage system; C. M. Miller, Engr. and Supt., Salisbury. (Lately noted to receive bids until Oct. 3.)

S. C., McClellanville.—Charleston County Commrs. will drain 4000 acres of land; work by convict labor; no bids; F. G. Eason, Drainage Engr., U. S. Dept. of Agriculture, Office of Experiment Stations, Charleston, S. C.

Tex., Beaumont.—Drainage Dist. No. 4 of Jefferson county let contract Lake Arthur Drainage Co. to construct 4 drainage canals, aggregating 21.4 mi. in length; total yardage, 628,000 cu. yds.; voted \$78,500 bonds; contract conditional on result of election on Oct. 19. (Call for bids lately noted.)

ELECTRIC PLANTS

Ala., Gadsden.—City contemplates building electric-light plant; Chas. L. Marsh, City Engr.

Fla., Jacksonville.—City will install 5000 K. W. 6000-volt 60-cycle turbo generator, with auxiliaries, for main station; lately noted; W. H. Tucker, Supt. Electrical Dept. (See Machinery Wanted.)

Fla., Melbourne.—City let contract J. B. McCrary Co., Engr., Atlanta, Ga., to construct electric-light system.

Ga., Helena.—City votes Oct. 17 on \$13,000 bonds to construct electric-light system and water-works; J. S. McLaughlin, Mayor.

Ky., Henderson.—City has plans by Bert L. Baldwin & Co., Perin Bldg., Cincinnati,

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

O., for boiler-room; 90x70 ft.; steel frame; brick walls; concrete foundation; steel window frames; estimated cost \$10,000; L. P. Hite, Supt. (Lately noted.)

Ky., Louisville.—City is reported as considering negotiations with Eastern Kentucky Coal Co. to furnish electricity for lighting from plant at Torchlight. Address The Mayor.

La., Gibsland.—City granted franchise H. M. Smith to build electric-light and power plant.

Md., Princess Anne.—E. C. Cannon will build electric-light plant; purchased 50 H. P. gas-producer power plant and 50 K. W. alternator; also install 35 H. P. gas or oil engine and small alternator; has contracted with town to light streets with 88 tungsten street lamps aggregating 6000 C. P.; pumps water for water system direct from engines; plant cost \$9000. (Lately reported.)

Miss., Meridian.—Tuberculosis Hospital Comm. let contract Dalton Electric Co., Meridian, to build electric-light and power plant for hospital.

Mo., Carrollton.—Water, Light & Transit Co. contemplates purchasing and installing 300 H. P. water-tube boiler in power-house.

Mo., Greenfield.—Greenfield Electric Light & Power Co. contemplates purchasing and installing small generator as auxiliary equipment.

Mo., Kirkwood.—City purchased and will install in electric-light and power plant 150 H. P. boiler, 100 K. V. A. and 150 K. V. A. generator, directly connected to engines, and 3 generator panels for switchboards; W. A. Trussell, Supt. (Board of Aldermen lately noted to have authorized improvements to electric-light plant costing \$17,000.)

Mo., Monroe City.—City will improve electric-light plant; contemplates erecting switchboard panel and constructing 1 mi. of line which will connect with Hunnewell; material purchased; O. R. Emerson, Supt.

Mo., Smithville.—City voted Sept. 29 on construction of electric-light system. Address The Mayor.

Mo., Tipton.—City will purchase and install 40 K. W. alternator, 50 H. P. low-speed engine and 3 K. W. exciter for electric-light and power plant; C. E. Clark, City Electrician.

Okla., Shattuck.—City contemplates purchasing and installing 100 H. P. Diesel engine in electric-light and water plant. Address The Mayor.

S. C., Branchville.—City voted \$10,000 bonds for electric-light plant. Address The Mayor. (Lately noted.)

S. C., Westminster.—City, H. B. Gilbert, Mayor, voted \$16,000 bonds to erect electric-light plant. (Proposed plant lately noted.)

Tex., Commerce.—Board of Trade, D. C. Lingo, Secy., is interested in installing street-lighting system; 20 ornamental 3-light and 50 street lights for residence section; 15 K. W. constant current transformer, 60-cycle, 2300-volt, 6-6 ampere; panel board, 4-section circuit; 6 arresters; carload white cedar poles, 30 ft. 6 in.; 2300 lbs. No. 8 W. P. wire; 40 brackets for street lights.

Va., Lynchburg.—E. C. Wiley prepared and submitted plans for municipal electric-light plant; estimated cost, \$150,000.

W. Va., Logan.—Logan County Light & Power Co., capital stock \$1,500,000, inceptd. by W. C. Lawrence, Jr., of Logan, Geo. W. Stevens, Jr., E. S. Aleshire and R. P. Aleshire of Huntington, W. Va., and B. C. McComas of Barboursville; will build power plant, 100x84 ft., of concrete, brick and steel construction; install four 500 H. P. water-tube boilers, two 2500 K. W. turbines, pumps, condensers, etc.; present installation for 10,000 K. W.; 75 mi. of 4,000-volt transmission lines; Engr., Francis R. Weller, Hibbs Bldg., Washington, D. C. (Further facts lately noted.)

FERTILIZER FACTORIES

Ala., Birmingham.—American Mining & Chemical Co. inceptd. to mfr. fertilizer, nine fertilizer materials, etc.; Prest., C. O. Jaggers, V.-P. and Gen. Mgr. of Interstate Oil & Fertilizer Co.; V.-P., John G. Cooke, Secy.-Treas., C. F. Avery.

Ky., Bowling Green.—Chas. Caudill purchased Simpson County Limestone Co.'s properties, including quarry in Warren county, stone from which is used almost entirely for fertilizer.

FLOUR, FEED AND MEAL MILLS

N. C., Burnsville.—Burnsville Milling Co., capital \$25,000, inceptd. by W. M. English, J. S. Huskins and others.

N. C., Mocksville.—Horn-Johnstone Co. (lately noted inceptd., capital \$25,000) con-

tinues established business with daily capacity 100 bbls. flour, meal and feed; L. G. Horn, Prest.-Mgr.; J. B. Johnstone, Secy.-Treas.

N. C., Seagrove.—Seagrove Mill & Store Co. increased capital stock from \$8000 to \$25,000.

S. C., Columbia.—B. R. Cooner, Prest. Columbia Grain & Provision Co., will build flour mill, 50 bbls. daily capacity, provided grain elevator is built. (See Miscellaneous Enterprises.)

S. C., Lexington.—Sol A. Meetez will install roller flour mill; cost \$4000; purchased equipment.

Tex., Jacksonville.—Jacksonville Grain & Commission Co. will install flour mill; purchased equipment.

Va., Norfolk.—Davis Milling Co., 1197 E. Water St., purchased machinery for corn and feed mills; will erect building; construction by owner; daily capacity 2500 bu. meal and feed. (Lately noted to install electric motor.)

FOUNDRY AND MACHINE PLANTS

Ala., Birmingham.—Grate Bar.—National Grate Bar Co., Lewis Minor, 1148 Brown-Marx Bldg., plans to erect and equip plant to mfr. grate bar; at present product will be manufactured by contract with local foundry.

Ala., Gadsden.—Soil Pipe.—Dixie Pipe Co. organized with Robt. Campbell, Prest.; J. Carroll, V.-P.; F. B. Ray, Secy.; J. M. Robinson, Treas.; capital stock \$40,000; will build plant in East Gadsden to mfr. soil pipe. (Previously noted.)

D. C., Washington.—Machines, etc.—Universal Products Co., capital \$25,000, inceptd. by F. V. Killian, 508 13th St. N. W.; LeR. Mark and H. E. Jenkins.

Fla., Dunedin.—Packing-house Machinery.—L. B. Skinner Mfg. Co., B. C. Skinner, Mgr.,

Ga., Tifton.—Gas Plant.—St. Louis agency is corresponding with J. B. Murrow relative to securing franchise and site, 150x150 ft., for gas plant.

Ga., Waycross.—Waycross Gas & Oil Co., capital stock \$15,000, inceptd. by L. J. Cooper, Marvin L. Bunn, I. A. Sugg and others; will drill for oil about 6 mi. from Waycross.

La., New Orleans.—Oil Export Plant.—Export Oil Corp. (J. A. Landry) is reported to expend about \$1,500,000 to erect plant at Avondale to include tanks, refinery, wharves, pipe line and other facilities for handling export oil; plans to erect 10 tanks of 55,000 bbls. capacity and 10 tanks of 37,500 bbls. each.

La., Rost (not a postoffice).—Refinery.—Mexican Petroleum Oil Co., J. Oswald Boyd, Local Mgr., New Orleans, will build plant to refine petroleum oils from Mexico; mfr. kerosene, gasoline, lubricating oils, etc.; reported cost \$500,000; let contract John H. Murphy of New Orleans to build 15 oil tanks, each of 55,000 bbls. capacity.

La., Shreveport.—Sodus Oil & Gas Co., capital stock \$15,000, inceptd.

La., New Orleans.—Texas & Oklahoma Oil Co. inceptd. with capital stock of \$450,000.

Okla., Cushing.—Refinery.—Consumers' Refining Co. is reported as to increase daily capacity of plant from 6000 to 10,000 bbls.; purchased additional property adjoining tank farm and will erect 30 to 35 steel storage tanks.

Okla., Okmulgee.—Schock Refining Co., capital stock \$100,000, inceptd. by E. E. Schock, A. F. Schock and Walter Weimer.

Okla., Nowata.—Cromwell Oil Gas Co., capital \$10,000, inceptd. by F. L. Langley of Nowata, C. H. Lamb of Cushing and E. R. Cromwell of Kansas City.

Okla., Perry.—Cozar Oil & Gas Co., capital \$13,000, inceptd. by John A. Harrison and Geo. H. Mouser of Perry and Herman Livingston of Sapulpa.

PROPOSAL ADVERTISEMENTS

IN THIS ISSUE

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will erect addition to factory, comprising foundry and warehouse; roof of saw-tooth construction; also install single I-beam electric traveling crane of 1 ton capacity.

Ga., Atlanta.—Printers' Supplies.—Johnson-Winkle Co., capital stock \$25,000, inceptd. by Chas. E. Johnson, C. I. Winkle and Frank V. Vaughn to mfr. printers' rollers, etc.

Miss., Meridian.—Car Repairs.—Meridian Car Works, lately noted incorporating to build and equip plant for car repair work, will be separate corporation from Meridian & Memphis, Ry., which was previously mentioned in connection.

N. C., Concord.—Machinery.—C. A. Blackwelder purchased controlling interest in Concord Foundry & Machine Co.; enlarge plant and install machinery.

S. C., Greenville.—Mill Equipment.—Carolina Loom Harness & Reed Co. organized by S. V. Muckenfuss of Spartanburg, S. C., and others; secured location in Williams Bldg. on S. Main St.

S. C., Greenville.—Mill Equipment.—Greenville Loom Reed & Harness Co., capital stock \$7000, organized with J. F. Richardson, Prest.-Treas.; G. W. Duncan, Secy., both of Greenville; Albert Nuttal, Gen. Supt., Charlotte, N. C.; acquired Gilbreath Bldg. on River St. and will equip; ordered machinery. (Lately noted inceptd.)

Va., Bridgewater.—Plows.—Bridgewater Plow Corp. increased maximum capital stock from \$10,000 to \$25,000; lately completed proposed 125x55-ft. 2-story brick building; completing installation of steel-working machinery, cost \$5000.

GAS AND OIL ENTERPRISES

Fla., Lakeland.—Gas Plant.—Lakeland Gas Co. will apply for charter within 60 days; will construct 7 mi. pipe lines within 18 mos. Address Roscoe Nettles, Gen. Mgr., Tampa Gas Co., Tampa, Fla. (Franchise lately noted granted to Mr. Nettles and others.)

Okla., Tulsa.—Oil Pipe Line.—Cosden Pipe Line Co., capital stock \$250,000, inceptd. by J. H. Yust, M. S. Sanford and E. R. Perry.

Okla., Tulsa.—Harnet Petroleum Co., capital \$3000, inceptd. by Alfred E. Aaronson of Tulsa, Solomon Harris and Sam Barnett of New York.

Tex., El Paso.—Gas Plant.—El Paso Gas Co. will remodel gas plant; cost \$50,000.

Tex., Port Arthur.—Gulf Refining Co. will build stills; let contract Orange Iron Works, Orange, for 500 tons gray-iron castings.

Va., Richmond.—Gas Plant.—City Gas Wks., W. P. Knowles, Supt., 101 City Hall, let contract Stacey Mfg. Co., Elmwood, Cincinnati, O., at \$16,000 to construct 3 purifiers of "Chollar" design, with foundation and connections complete. (Call for bids lately noted.)

ICE AND COLD-STORAGE PLANTS

Ala., Birmingham.—Birmingham Packing Co., C. H. Ungerman, Prest., 2105 Morris Ave., will open bids Jan. 1 to erect 2-story 50x80-ft. fireproof building; machinery contracts let; plant to have daily capacity of 125 tons.

Ala., Gilbertown.—M. C. Jackson will install cold-storage plant for meat refrigeration; cement construction; handles 100 lbs. meat daily. (Lately noted.)

Ky., Owensboro.—Lane Ice & Packing Co., capital stock \$5000, inceptd. by T. T. Lane, Jno. W. Lane and Chas. Akin.

Okla., Tahlequah.—Tahlequah Ice & Fuel Co. (lately noted inceptd., capital stock \$5000) organized with H. Wurdack, Prest.; I. R. Kelso, V.-P., and R. A. Drum, Secy.-Treas.; no machinery needed.

IRON AND STEEL PLANTS

Va., Pulaski.—Iron Furnace.—Pulaski Iron Co., Percival Johnson, Gen. Mgr., Real Estate Trust Bldg., Philadelphia, Pa., has not

arrived at definite conclusions relative to additional blast furnace. (Previously noted.)

LAND DEVELOPMENTS

Ark., Ashley County.—Wm. T. Hammock of Quitman, Ark., purchased 2200-acre prairie farm and will improve as stock ranch.

Ark., Evening Shade.—Sharp County Land Co. will be inceptd. by T. J. Davidson and M. S. Coger.

Fla., St. Augustine.—Fountain N. Holmes purchased entire interest in Hanson tract of 1000 acres; will divide into truck and stock farm and fruit orchard; devote 400 acres to stock raising; build stock pens; plans to divide section of tract into 5 and 10-acre farms.

Ky., Dawson Springs.—Dawson Springs Bottling Co. purchased Redden well; raise buildings and convert property into park; also plans to erect office and store building.

Md., Baltimore.—Swimming Pool.—City is considering construction of swimming pool in Clifton Park; estimated cost \$50,000; Public Bath Com. agreed to contribute \$15,000; Geo. Weems Williams, Prest. Board Park Commrs. Druid Hill Park.

Mo., Fairfax.—Schooler Farm Co., capital \$2400, inceptd. by Asa L., Harvey H. and Chas. H. Schooler.

S. C., Charleston.—Alberta Realty Co., capital \$3000, inceptd. by C. B. Jenkins, T. T. Hyde and C. B. Jenkins, Jr.

S. C., Greenwood.—Edgerwood Cemetery Co., capital stock \$5000, inceptd.; W. V. Blythe, Prest.; V. S. Aiken, V.-P.; E. R. Goodwyn, Secy.-Treas.; develop about 17 acres as cemetery; grading completed; other improvements include driveways, graveling, fencing, etc.; cost \$5000.

Tenn., Kingston.—Kingston Orchard Co., capital \$8000, inceptd. by H. S. Crumbliss, A. L. Gambill, J. S. Parker, C. N. Rose and others.

Tex., Brownwood.—Wm. Capps of Fort Worth and H. A. Halbert of Coleman contemplate combining pecan interests to extent of 840 acres and organizing company with \$100,000 capital; former owns seedling orchard at Brownwood and latter top-worked orchard 2 mi. from Coleman.

LUMBER MANUFACTURING

Fla., Bartow.—Bartow Mfg. Co. let contract to L. Z. Tate to erect lately-noted buildings; 80x120-ft. mill building; warehouse 60x100 and 40x60 ft.; machinery arranged for; produce shop work and lumber.

Fla., Wauchula.—Southern Lumber Mfg. Co., lately noted organized and to rebuild purchased plant, will erect 50x100-ft. \$300 building and 16x30-ft. office building of ordinary construction; install planing mill and novelty works machinery; W. F. Sned, Prest., and T. L. Wareing, V.-P., both of Lakeland, Fla.; W. E. Folsom, Secy.-Treas. and Mgr.

Ga., Chaston.—L. W. Cowart will rebuild burned sawmill.

S. C., Georgetown.—Winyah Lumber Co. will erect sawmill; buildings of ordinary mill construction; install machinery; daily capacity 40,000 ft. timber. (Lately noted to rebuild plant burned at loss of \$100,000.)

La., Iacombe.—Davis-Wood Lumber Co. inceptd. with capital stock of \$50,000.

Okla., Muskogee.—J. P. Wheat of Vinita, Okla., is reported to establish planing mill; secured building and equipment.

Va., Norfolk.—Anthracite Prop Timber Co., capital \$15,000, inceptd.; H. N. Pattison, Prest., Philadelphia, Pa.; Silas C. Herring, Secy., Norfolk.

Va., Richmond.—Prince Edward Lumber Co., capital \$15,000, inceptd.; S. G. Meredith, Prest.; S. V. Meredith, Secy.

METAL-WORKING PLANTS

Fla., Tampa.—Tin Shingles.—Southern Roofing Co., J. T. Tucker, Prest., 914 Franklin St., will install machinery to mfr. reversible lock and surface tin shingles; daily capacity 50 squares; lately noted inceptd., \$100,000 capital. (See Machinery Wanted.)

Va., Richmond.—Metal.—Southern Metal Co., authorized capital \$15,000, inceptd.; Geo. Smith, Prest.; H. W. King, Secy.-Treas.

MINING

Fla., Ocala.—Phosphate.—Florida Soft Phosphate & Lime Co. organized by Wm. S. Hildans and others; general offices, 1021 Woodward Bldg., Washington, D. C.; will build plant to mine soft phosphate.

Md., Oakland.—Limestone, Gravel, etc.—Oakland Lime & Stone Co., capital \$25,000, inceptd.

porated by Chas. F. Hammond (2d St.) and others.

Mo., Joplin—Lead and Zinc.—Higgins Land & Mining Co., capital \$30,000, incptd. by F. S. Higgins, C. E. Miller and C. J. Martin.

Mo., Joplin—Lead and Zinc.—Bradley Lead & Zinc Co., capital \$75,000, incptd. by Fred M. Weber of Joplin, P. H. Poindexter of Owensboro, Ky., and others.

N. C., Whiteville—Phosphate.—P. H. Sears contemplates developing phosphate deposits.

Okla., Bromide—Iron.—Galbreath Iron & Mining Co., capital \$25,000, incptd. by Robt. Galbreath and M. E. Galbreath of Tulsa and S. G. Lockwood of Crafton, Pa.

Okla., Miami.—Katy Mining, Milling & Royalty Co., capital \$50,000, incptd. by R. S. McMahon of Miami, J. B. Durbin of Okmulgee and J. C. Jones of Ardmore.

Va., Shenandoah County—Manganese.—Crimora Manganese Corp., capital stock \$1,000,000, incptd.; John D. Brooks, Pres., New York; John H. Hurlburt, Secy.-Treas., Stamford, Conn.

MISCELLANEOUS CONSTRUCTION

Ala., Mobile—Heating and Ventilating Systems.—School Com. let contract Moncrief Furnace Co. of Atlanta, Ga., at \$17,247 to install fanblast system of combined heating and ventilating in Barton Academy, Russell School, Semmes School and Old Shell Road School.

Fla., Bradentown—Concrete Retaining Wall.—City will build 700-ft. reinforced concrete retaining wall; about 326 cu. yds.; bids until Oct. 12 for same, including filling, piles and hand rail; Phil Lacey, Commr. Public Works. (See Machinery Wanted.)

Fla., Jacksonville—Retaining Wall, etc.—Port Comms., F. W. Bruce, Chief Engr., let contract to Wade, Clower & Wade, Jacksonville, to construct retaining wall for municipal terminal docks; let contract to Lackawanna Steel Co., Lackawanna, N. Y., for steel sheet piling; cost (including material and construction) \$80,000; to Home Dredging Co. of Mobile for dredging about 100,000 cu. yds. and filling. (Lately noted.)

Fla., West Palm Beach—Seawall.—City voted \$100,000 bonds for seawall along Lake Worth. Address The Mayor. (Lately noted.)

Ga., Atlanta—Cable System.—Georgia Ry. & Power Co. is reported as contemplating expenditure of \$60,000 to install system of cable over its various routes to lessen damage to city's water mains, conduits and fire-alarm cables.

Miss., Biloxi—Pleasure Pier.—H. B. Mack of Chattanooga, Tenn., representing English capitalists, submitted proposition to erect pleasure pier at foot of Porter Ave.; extend 1200 ft. into channel; width 40 ft.; dancing pavilion; bathhouses underneath; estimated cost \$100,000.

N. C., Wilmington—Lock and Dam.—Govt. will construct cofferdam for lock at Brown's Landing in Cape Fear River, 71 mi. above Wilmington; 85x25 ft., inside dimensions; pocket construction; lock and dam to be second and last in connection with canalization of Cape Fear River between Wilmington and Fayetteville; to accommodate vessels 200 ft. long and 40 ft. wide; work includes (besides lock) timber crib dam, concrete abutment and 2 lock tenders' dwellings; contract to furnish about 1500 tons steel piling let to Lackawanna Steel Co., Lackawanna, N. Y.; H. W. Stickle, Maj., Corps Engrs., U. S. Army.

Tex., Austin—Wharf, etc.—City will construct about 600 ft. wharf on lake and make improvements to park; cost \$10,000; A. C. Scott, Consult. Engr.; date of opening bids not determined. (Lately noted.)

Va., Richmond—Tunnel.—C. P. E. Burgwyn, Engr., 917 Main St., Richmond, submitted report on plan to construct tunnel under Broad St. from 15th St. to connect city proper with Shockoe Valley; plans call for subway 42 ft. wide, with concrete walls and steel girders; street to have sidewalks on each side of tunnel, but none through passage; construction bids opened Oct. 15; Chas. E. Bolling, City Engr.; lately noted. (See Machinery Wanted.)

MISCELLANEOUS ENTERPRISES

Ala., Gadsden—Construction.—W. T. Christopher Construction Co., capital stock \$5000, incptd.; W. T. Christopher, Pres.; G. L. Christopher, V.-P.; C. C. Christopher, Secy.-Treas.

Ark., Little Rock—Abattoir.—Butchers' Packing Co. contemplates building abattoir.

D. C., Washington—Printing.—Crane Printing Co. let contract to Arthur M. Poynton, 715 14th St., Washington, to erect printing plant; 4 stories; ordinary construction; cost \$10,000; Clarence L. Hardin, Archt., 1126 Woodward Bldg., Washington. (Lately noted.)

Fla., Pensacola—Crematory.—City let contract Nye Odorless Crematory Co., Macon, Ga., to build crematory of 10 tons capacity.

Fla., St. Augustine—Stock Farm.—Fountain N. Holmes will establish stock farm to comprise 450 acres; build stock pens, etc. (See Land Developments.)

Fla., Tampa—Agricultural Dynamiting.—Tampa Agricultural Dynamiting Co., capital stock \$5000, incptd. to contract for agricultural dynamiting, sell dynamite, etc.; Amos H. Norris, Pres.; C. B. Burrows, V.-P.; W. E. Arthur, Secy.-Treas.

Ky., Richmond—Printing.—Climax Printing Co. increased capital stock from \$5000 to \$15,000.

La., Shreveport—Fire-alarm System.—City will extend underground fire-alarm system; bids until Oct. 6; L. H. Baker, Secy.-Treas. (See Machinery Wanted.)

Miss., Natchez—Construction.—Jackson Construction Co., capital \$50,000, incptd. by E. H. Jackson, Mrs. P. B. Jackson, T. R. Barber and others.

Mo., Kansas City—Ranch.—Santa Fe Ranch Co., capital \$25,000, incptd. by Fred F. Sparul, F. C. Hazen and Chas. M. Brown.

Mo., St. Louis—Light Fixtures.—Meldrum-Bunsen Light Co., capital \$3000, incptd. by Philip L. Nassauer, Baldwin D. Bunsen and Fred Meldrum.

N. C., Charlotte—Contracting.—Hall & Williams (S. L. Williams and Chas. D. Hall) organized; contractors and builders.

N. C., Wilmington—Abattoir.—J. J. Hopkins & Son Co. let contract Rhodes & Underwood of Wilmington to build abattoir and quarantine pen on Smith's Creek; estimated cost \$10,000; B. H. Stephens prepared plans and specifications and will supervise erection; structures include 84x48-ft. main building, 25x23-ft. reduction plant, 170x30-ft. quarantine pens and 25x22-ft. boiler-house.

S. C., Anderson—Grain Elevator.—Farmers' Grain & Elevator Co. will probably be organized with \$40,000 capital to build grain elevator; P. A. Whaley, Secy.

S. C., Columbia—Grain Elevator.—Chamber of Commerce interested in plan to secure erection grain elevator of 75,000 bus. capacity; cost \$15,000.

Tex., Dallas—Laundry.—Cannon Ball Towel Supply Co., 2009 Orange St. (R. O. Mills, W. E. Hunter and H. G. Caldwell interested), will incorporate; officers not chosen; will let contract Mar. 1 to erect 60x155-ft. building; plans by J. H. Gill, Slaughter Bldg.; Dallas; install machinery costing \$10,000; lately noted. (See Machinery Wanted.)

Tex., Dallas—Plumbing.—Dallas Plumbing Co., capital stock \$6500, incptd. by C. L. Dickerson, H. S. Trewitt and Mrs. Carrie Butcher.

Tex., Houston—Laundry.—Harris county will build laundry and barn at County School for Girls; H. L. Washburn, County Auditor, receives bids until Oct. 12; plans and specifications on file with Ennis Cargill or Fred Teich, Archt., from whom copies may be had.

Tex., McKinney—Grain Elevator.—Collin County Mill & Elevator Co. let contract D. J. Carrio of Fort Worth to build grain elevator; reinforced concrete; length 100 ft.; width 44 ft.; height 108 ft.; capacity 200,000 bushels.

Va., Norfolk—Plumbing.—Norfolk Plumbing Co., capital \$15,000, incptd.; W. B. Gaskins, Pres.; L. A. Winslow, Secy.

Va., Norfolk—Squab Farm.—Virginia Squab Farm, capital stock \$1500, incptd.; B. F. Bachelder, Pres.; A. Bain Burgess, Secy.-Treas.

W. Va., Logan—Supplies.—Guyan Valley Supply Co., capital stock \$50,000, incptd. by S. B. Robertson, J. Carey Alderson, R. L. Shrewsbury and others.

MISCELLANEOUS FACTORIES

Ala., Birmingham—Belts.—Geo. J. Nagel, 2807 Brown Ave., plans to establish belt shop. (See Machinery Wanted.)

Ala., Birmingham—Bottling.—Cola-Ola Mfg. Co., capital stock \$10,000, incptd. by A. J. Clarke, John May and W. M. Martin.

D. C., Washington—Universal Products Co., capital stock \$25,000, incptd. by Franklin V. Killian, 508 13th St. N. W., and Henry E. Jenkins.

Fla., Bartow—Ice-cream.—Paul Connor will build ice-cream factory.

Fla., Palatka—Cigars.—J. B. Figaro secured building at 719 Lemon St. and will equip to mfr. cigars.

Ky., Louisville—Chemicals.—Allan Chemical Co. increased capital stock from \$7000 to \$20,000.

Ky., Louisville—Plaster.—Standard Wall Plaster Co. (T. J. Daily interested), Brook and Bloom Sts., let contract to A. J. Bannan, Louisville, to erect factory building; 50x80 ft.; 2 stories; machinery purchased; daily capacity 40 tons wall plaster. (Lately noted.)

Ky., Owensboro—Bakery, etc.—Southard Co., capital stock \$50,000, incptd.; E. P. Southard, Pres.; H. H. Helmaroth, V.-P.; I. P. Freund, Secy.-Treas.; takes over Owensboro Bread Co.; also mfrs. ice-cream and candy.

Ky., Princeton—Bottling.—P. G. Bottling Co. (lately noted incptd., capital stock \$10,000) organized; J. M. Phillips, Pres.; G. J. Phillips, V.-P. and Secy.; J. B. Greer, Treas.; continues production of soda and mineral waters, 800 doz. daily.

La., Alexandria—Medicine.—Mitchell Medicine Co. incptd. with capital stock of \$200,000.

La., New Orleans—Jewelry.—Waldhorn Co. incptd. with capital stock of \$100,000.

La., New Orleans—Garters.—Ivory Garter Co. leased third floor Commercial Bldg. at 611 Baronne St., containing 9000 sq. ft. floor space.

La., New Orleans—Nut Machinery.—Louisiana Nut & Machinery Co., capital stock \$100,000, incptd. to mfr. machines and devices for cracking nuts, etc.

Md., Baltimore—Hardware Specialties.—Dix Mfg. Co., 1021 Guilford Ave. let contract Jas. J. O'Connor, 427 E. Lexington St., Baltimore, to erect factory building at Concord and Eager Sts.; 120x120 ft.; reinforced concrete fireproof construction; daylight plan; install machinery to mfr. hardware specialties, removing equipment from present plant; Archt., Chas. M. Anderson, 324 N. Charles St. (Lately noted.)

Mo., Kansas City—Feathers.—Gottlieb Feather Co., capital stock \$25,000, incptd. by Isidor A. Adler, Fred Gottlieb and Aaron Block.

Mo., Kansas City—Pens.—Kraker Pen Co., capital stock \$15,000, incptd. by J. A. Kraker, Harvey C. Craig and L. A. Blumenthal.

Mo., Kansas City—Zahner Mfg. Co., capital \$50,000, incptd. by Wm. E. Henry and Frank L. Zahner.

Mo., Liberty—Clothing.—J. J. Stogdale Clothing Co., capital \$20,000, incptd. by John J. and Robt. Stogdale and Homer J. Black.

Mo., St. Louis—Macaroni.—V. Viviano & Bros., Carr St., between 6th and 7th Sts., accepted plans for 6-story addition to plant; 4 stories; cost \$80,000.

N. C., Cherryville—Red Springs.—Dellinger Bros., D. P. Dellinger, Pres.-Treas., contemplates installing machinery to mfr. bed springs. (See Machinery Wanted.)

N. C., Durham—Tobacco.—W. C. Bradsher Tobacco Co. organized; Jones Fuller, Pres.; W. C. Bradsher, Secy.-Treas.; will operate tobacco factory. (Lately noted incptd., \$50,000 capital.)

N. C., Rocky Mount—Dairy.—Rocky Mount Dairy Co. organized; T. H. Lancaster, Pres.; R. H. Moon, V.-P.; J. W. Boerton, Secy.-Treas.; will operate dairy. (Lately noted incptd., \$5000 capital.)

N. C., Wilmington—Bottling.—Kelford Coca-Cola Bottling Co., capital \$5000, incptd. by G. H. Hutaff, W. J. Hutaff and Tibitha Hutaff.

Okla., Enid—Topper and Ensilage Cutter.—McOsker Topper & Ensilage Cutter Co., capital \$5000, incptd. by S. D. McOsker of Alene, Clarence D. McOsker of San Antonio, Tex., and John W. Foster of Shattuck.

Okla., Oklahoma City—Serum.—Oklahoma Serum Co., capital \$3000, incptd. by C. B. Sale, A. J. McCarthy and W. T. Hassett.

S. C., Columbia—Tents and Awnings.—Columbia Awning & Tent Co., F. L. Brown, proprietor, will double capacity of plant.

S. C., Greenville—Tires.—Greenville Fisk Tire Co., capital stock \$5000, incptd. by T. H. Cunningham and M. C. Westervelt.

S. C., Greenville—Bakery.—J. A. Cureton & Co. will establish bakery; erecting brick building; ovens to be installed by Duhrkop Oven Co. of New York.

Tenn., Harriman—Bakery.—N. T. Sefton Bakery Co. is reported to establish bakery.

Tex., Dallas—Films.—Texas Paramount Picture Co., 1902 Commerce St., organized; S. A. Lynch, Pres.; C. E. Tandy, Secy.-Treas.; operates film exchange, buying and leasing picture films; will not mfr. (Lately noted incptd., \$10,000 capital.)

Tex., Dallas—Brewery.—Meyer Beer Co. will build fireproof plant and warehouse at 1010 Canton St. to replace burned building; estimated cost \$50,000.

Va., Norfolk—Bakery.—Chas. Davis will rebuild bakery at 274-276 Brewer St. reported burned at estimated loss of \$30,000.

Va., Roanoke—Bakery.—Walter C. Michael, proprietor Michael's Bakery, 501 Commerce St., let contract L. C. Rhodes at \$20,975 to erect bakery; 2 stories; brick; site 60x165 ft.; Archt., H. M. Miller of Roanoke. (Lately noted.)

Va., Staunton—Lime.—H. B. Sproul, C. R. Caldwell and Glenn Ruckman will install lime-grinding plant with daily capacity 20 tons; steam power; purchased equipment.

Va., Suffolk—Peanuts.—John King Peanut Co., John King, Pres., will rebuild peanut plant; erect 50x140-ft. building; mill construction; cost \$2500; bids opened Sept. 23; install machinery to cost \$30,000; daily capacity 1500 bags peanuts. (Lately reported burned.)

W. Va., Elm Grove—Bakery.—John J. Rinehart of Wheeling will install baking equipment in building on Main St.

W. Va., Fairmont—Ice Cream, Beverages, etc.—Marion Products Co. acquired plant of Fairmont Brewing Co.; will enlarge and remodel for ice-cream and soft-drink manufacturing; F. R. Brahm, Pres. and Mgr.; J. A. Clark, V.-P.; H. J. Hawkins, Secy.; John H. Rock, Jr., Treas. (Lately noted incptd., capital stock \$110,000.)

W. Va., Huntington—Hats.—Great Southern Hat Co., Box 100, organized; A. A. Riddleberger, Pres.; J. R. Vest, V.-P.; E. A. Jordan, Secy.; W. H. Duff, Treas.; John Whitaker, Mgr.; install machinery to mfr. hats; daily capacity 24 doz.; lately noted incptd., \$25,000 capital. (See Machinery Wanted.)

MOTORS AND GARAGES

Ala., Mobile—Garage.—Guy C. Hartwell will erect 3-story garage at St. Joseph and St. Louis Sts.; cost \$11,000.

Ark., Little Rock—Automobiles.—Butler Auto Co., capital stock \$12,000, incptd.; F. L. Butler, Pres.; Fremont Stokes, V.-P.; Mary A. Stokes, Secy.-Treas.

Ga., Savannah—Automobiles.—Dupont Auto Livery Co., capital \$1000, incptd. by R. A. Hicks and F. T. Dupon.

Ky., Louisville—Garage.—City will build garage and machine shop; Roger McGrath, Secy. Board of Public Works. (This is in connection with stables, for which contract was lately noted let to John Greiner & Son.)

La., Shreveport—Automobiles.—Shreveport Overland Co. incptd. with capital stock of \$50,000; W. H. Johnson, Pres.; J. D. Youngblood, V.-P.; L. M. Howard, Secy.-Treas.; will lease building now under construction for automobile salesroom.

Mo., St. Louis—Garage.—Ford Motor Co. (main office, Detroit, Mich.) will remodel plant; cost \$15,000; Contr., Chapline Construction Co., St. Louis.

N. C., Salisbury—Automobiles.—Piedmont Automobile & Truck Co. organized; W. A. Brown, Pres.; J. C. Mann, V.-P.; J. J. Cuddihy, Secy.-Treas.; leased building; deals in automobiles, etc. (Lately noted incptd., \$25,000 capital.)

N. C., Weaverville—Garage.—Grand View Hotel Co. (J. J. Reagan and others) will build garage. (See Hotels, under Buildings Proposed.)

Okla., Oklahoma City—Automobiles.—Oklahoma Overland Motor Co., capital \$20,000, incptd. by Sam Johnson, Edgar C. Johnson and J. Rooney.

Okla., Tulsa—Garage.—S. W. Marr of Colonial Bank & Trust Co. is reported to build garage; 1 story; brick.

Tenn., Memphis—Garage, etc.—Atlas Garage & Machine Co., 287 Monroe St., organized; H. E. Bridges, Pres.; J. C. Scott, Mgr.; operate garage and repair shop; machinery mainly installed; lately noted incorporated, \$3000 capital. (See Machinery Wanted.)

Tenn., Memphis—Garage.—Bender's Garage, capital stock \$2500, incptd. by D. A. Fisher, C. N. Bender, L. G. Bender and others.

W. Va., Moorefield—Automobiles and Supplies.—Doman Bros. Supply Co., capital stock \$5000, incptd. by John E. Doman, Ashby Doman, Robt. E. Doman and others.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Ky., Lexington.—Louisville & Nashville R. R., W. H. Courtenay, Ch. Engr., Louisville, will expend about \$40,000 to build

roundhouse and repair shops; brick, concrete and steel; Contr., Rommel Bros., Louisville. (Lately noted.)

Va., Richmond.—Southern Ry., B. Herman, Ch. Engr., 1300 Pennsylvania Ave., Washington, D. C., let contract to P. J. White & Son, Richmond, to construct yard office at South Richmond, and J. H. Campbell & Bro., Richmond, to install steam heating plant at new freight station at Richmond. (Other contracts lately noted.)

ROAD AND STREET WORK

Ala., Birmingham.—City will pave sidewalks on 7th Ave., Wylam; 500 yds. cement sidewalks, 300 yds. excavation and 500 lin. ft. combined curb and gutter; cost \$1000; also improvements on 35th St. from Ave. C to Ave. E, including 3000 cu. yds. grading, 230 sq. yds. brick paving, 1400 lin. ft. curb and gutter, 700 yds. cement walk, 400 cu. yds. slag and 400 cu. yds. chert; cost \$4300; bids Sept. 29; Julian Kendrick, City Engr.

Ala., Wetlowee.—Randolph county will grade, drain and surface with top soil or gravel part of Wetlowee and Roanoke Rds. beginning at Wetlowee; expenditure \$8000; W. S. Skeller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Fla., Daytona.—C. G. Burgoyne will build concrete walk along water front, several blocks long, with ornamental lighting standards, etc.; contract let.

Fla., Eustis.—City contemplates hardsurfacing streets with sand-oil; engaged J. B. McCrary Co., Engr., Atlanta, Ga., to submit estimates of cost.

Fla., Fort Pierce.—St. Lucie county let contract to Evert P. Maule, West Palm Beach, Fla., to resurface and widen 5 mi. road; amount available, \$11,000; Miller Hallows Co., Engr. (Previously noted.)

Fla., St. Augustine.—St. John county will repair John Anderson Highway from junction with Moody Blvd., mi. south of St. Augustine, north to Pellicer Creek, 13 mi.; let contract W. H. Cochran.

Fla., West Palm Beach.—City voted \$100,000 bonds for hard-surfacing streets, etc. Address The Mayor. (See Sewer Construction.)

Fla., West Palm Beach.—Palm Beach county let contract to Evert P. Maule, West Palm Beach, to build rock boulevard from Palm Beach to Delray, 25 mi. (Previously noted.)

Fla., West Palm Beach.—Palm Beach county will construct cement sidewalk on north and south sides of site for new courthouse; bids until Oct. 6; R. H. Rousseau, Chrmn. County Commrs.

Ky., Lexington.—City will construct sidewalk on Main St.; contractor, D. K. Ceeli.

Ky., Louisville.—Board of Public Works let contract Louisville Asphalt Co. at \$38,800 to pave Market St. from 17th to 22d St. with asphalt, and 1st St. from Kentucky to Oak St. with bituminous concrete; Hickel Asphalt Paving Co. at \$14,400 to pave Walnut St. from 14th to 17th St. with asphalt.

Ky., Ludlow.—City votes in November on \$40,000 bonds for street improvement; will build (in spring) brick street to cost \$20,000; Chas. F. White, Mayor.

Ky., Mt. Vernon.—R. E. Gentry, lately noted interested in construction first 13 mi. Boone Way (portion of Lincoln automobile highway), states road is but proposition at present; when built will follow Boone's old wilderness turnpike and extend from Cumberland Gap to Crab Orchard, Ky., there connecting with central Kentucky pikes; now proposed that counties through which road passes shall build their portions, assisted by State.

Ky., Whitesburg.—Letcher County Fiscal Court let contract to J. J. Brady, Mater, Ky., to grade 6 mi. road; amount available, \$10,000 to \$15,000; O. N. Lewis, Engr., Whitesburg. (Lately noted as letting contract to Munday & Barnes to construct 6 mi. road from Mayking to Kona.)

La., Covington.—St. Tammany Parish Police Jury voted to invite bids to construct road from Covington to Franklinton; State to pay one-third of cost; balance to be provided for out of \$180,000 bond issue.

La., New Orleans.—City will pave Constance St. from Louisiana Ave. to Valmont St. with bitulithic, and Dumaine from N. Rampart to Decatur, Solomon from Dumaine to City Park, Dupre from Ursuline to Esplanade, Cleveland from Carrollton Ave. to Solomon, and Governor Nicholls from Decatur to Rampart St.; A. G. Ricks, Commr. (Call for bids lately noted.)

Md., Baltimore.—City will grade west footway of Reisterstown Rd. from Liberty Heights Ave. to about Old Toll Gate, about

1200 sq. yds.; bids until Oct. 7; H. K. McCay, City Engr. (See Machinery Wanted.)

Md., Baltimore.—City will pave various alleys covering 7700 sq. yds. cement concrete paving, contract No. 96; South St. from Lombard to Baltimore, and Guilford Ave. from Baltimore to Fayette St., contract No. 89, requiring 1950 sq. yds. wood-block paving and 1250 sq. yds. granite block repaving; Dover St. from Fremont to Eutaw St. and various alleys, contract No. 97, 3670 sq. yds. vitrified block paving and 3400 sq. yds. granite block repaving; all on concrete base; bids until Oct. 7; R. Keith Compton, Chrmn. and Consult. Engr. Paving Com. (See Machinery Wanted.)

Miss., Biloxi.—Harrison County Supvrs., Gulfport, authorized Cal Smith of Biloxi to issue \$3000 bonds to construct road northeast from Biloxi through Harrison and Jackson counties.

Miss., Pittsboro.—Calhoun county has \$8000 available to construct 6½ mi. road from Pittsboro to eastern boundary of Supvrs. Dist. No. 1, and road leading from there to Loosascoona River at crossing near Old Town; J. E. Brown, Engr., Calhoun City, Miss. (Lately noted to receive bids until Oct. 6.)

Miss., Purvis.—Lamar County Supvrs. are reported to issue \$5000 road bonds.

Miss., Starkville.—Oktibbeha county voted \$130,000 bonds to construct roads. Address County Commrs. (Lately noted.)

Miss., Vicksburg.—Warren county will grade hill on road on Bryson Pl. in 4th Dist.; Supvrs. receive bids until Oct. 6; J. D. Laughlin, Clerk. (See Machinery Wanted.)

Mo., Nevada.—City let contract V. E. Koch, Joplin, Mo., to pave N. Main St.

Mo., Osceola.—St. Clair county votes Nov. 3 on \$14,000 bonds to construct roads. Address County Commrs. (Noted in July.)

Mo., St. Joseph.—City will pave Hyde Park Ave. from King Hill Ave. to 9th St. Address The Mayor.

Mo., St. Joseph.—Board of Public Works contemplates grading 12th St. from High St. to Grand Ave. and paving Franklin St. from 4th to 5th St. with concrete; Board of Public Works will invite bids to lay sidewalks on Angeliue St., 15th to 16th St.

Mo., Warrensburg.—City let contract Geo. T. Menefee & Son, Sedalia, for 8000 sq. yds. brick paving.

N. C., Durham.—City will pave Walker, Henderson and Elm Sts.; 5600 cu. yds. excavation, 5930 lin. ft. combination concrete curb and gutter and 1620 lin. ft. 8-in. terra-cotta sewer; bids until Oct. 3; W. G. Bradshaw, Chrmn. Street Committee. (See Machinery Wanted.)

N. C., Weaverville.—Grand View Hotel Co. (J. J. Reagan and others) contemplates build automobile highway from base of mountain to hotel site. (See Hotels, under Buildings Proposed.)

Tenn., Knoxville.—City, S. G. Heiskell, Mayor, issues \$25,000 bonds for paving Gay St.; Dennis G. Leahy, Recorder and Treas.

Tenn., Nashville.—City will construct concrete curbs and sidewalks on Union St. from 6th to 8th Ave., and Childress St. from Pennock to N. 4th St.; bids until Sept. 29; H. E. Howse, Mayor. (See Machinery Wanted.)

Tenn., Centerville.—Leon county will construct system of roads, bridges and culverts in Oakwoods Dist.; work will comprise construction of Oakwoods-Buffalo, Oakwoods-River and Oakwoods-Palestine roads; \$40,000 bonds issued; bids until Oct. 1; consulting engineers, Browne & Wilder, Navasota; J. T. Dashiell, County Judge. (See Machinery Wanted.)

Tex., Dallas.—J. M. Preston, City Engr., submitted to S. B. Scott, Street Com., specifications for paving on portions of Vanty, Bowen, Latimer, Pearl and Bishop Sts.; estimated cost \$133,000.

Tex., Fort Worth.—City will pave Houston St. from 10th to E. 1st St., containing about 10,000 sq. yds., with vitrified brick or creosoted wood block pavement; bids until Oct. 6; P. J. von Zuben, City Engr.; John F. Grant, Commr. Streets and Public Property. (See Machinery Wanted.)

Tex., Galveston.—City will pave Broadway from 29th to 40th St. under original plan for work in that locality; A. T. Dickey, City Engr.

Tex., Houston.—Harris county will extend Houston and Clinton Rds. 3600 ft.; let contract Sept. 28; H. L. Washburn, County Auditor.

Tex., Rockwall.—Rockwall county will issue \$20,000 bonds to improve roads. Address County Commrs.

Va., Petersburg.—City will construct about 4000 sq. yds. creosoted wood-block roadway paving on E. Bank St. from 2d St. to Madison St.; bids until Oct. 5 at office of J. R. Jones, Chrmn. Street Comm.; R. D. Budd, City Engr.; lately noted. (See Machinery Wanted.)

Va., Richmond.—City let contract Washington Asphalt Block & Tile Co., 306 7th St. S. W., Washington, D. C., at about \$20,000 for asphalt block paving on Monument Ave., 11th St., Clay St., etc.

Va., Richmond.—Administrative Board let contract Central Construction Co. of Harrisburg, Pa., at about \$150,000 to lay about 100,000 sq. yds. asphaltic concrete paving; Chas. E. Bolling, City Engr. (Lately noted.)

Va., Richmond.—City let contract to A. W. Maynard, Richmond, to construct brick sidewalk; amount available, \$18,000; J. N. Eubank, Engr.; Chas. E. Bolling, City Engr. (Other contracts lately noted.)

Va., Richmond.—City will grade and gravel streets, lay granite spall alley paving, granolithic sidewalks, curbs and gutters, granite block and Durax cube paving; bids until Oct. 1; Chas. E. Bolling, City Engr. (See Machinery Wanted.)

W. Va., Charleston.—City will curb and pave 29 streets; about 40,400 ft. curb and 68,300 sq. yds. paving; G. S. Brown, Loewenstein Bldg., City Engr.; bids until Oct. 2 at office Board of Affairs, J. F. Bedell, Pres.; date postponed from Sept. 24; lately noted. (See Machinery Wanted.)

W. Va., Huntington.—City will repave 4th Ave. from 9th to 10th Sts. with brick. Address The Mayor.

W. Va., Weston.—Freemans Creek Dist. of Lewis county votes Nov. 3 on \$100,000 bonds to pave 6 mi. brick road; W. K. Spaur, Road Engr.; another district plans to vote on \$20,000 bonds to build 12 or 13 mi. road, 3 mi. of which will be on Staunton and Parkersburg turnpike from Weston to Buchanan; Elias M. Stalmaker, Pres. County Court.

SEWER CONSTRUCTION

Ark., Argenta.—City let contract Gass & Horton of Houston, Tex., at \$275,244.50 to construct storm and sanitary sewer system in Sewer Improvement Dist. No. 1; 17 mi. tile sewers and 3 mi. reinforced concrete sewers; Engrs., Lund & Hill of Little Rock. (Lately noted as lowest bidders.)

Ala., Camp Hill.—City, W. C. Newell, Mayor, asks bids until Oct. 15 to construct sewer system; 13,500 ft. 8-in., 4200 ft. 10-in. and 900 ft. 12-in. terra-cotta pipe; 52 man-holes; 20 lamp holes; Edgar B. Kay, Engr., Tuscaloosa, Ala. (See Machinery Wanted.)

Fla., West Palm Beach.—City voted \$100,000 bonds for sewerage, hard-surfacing streets and seawall along Lake Worth. Address The Mayor. (Lately noted.)

Ga., Lafayette.—City votes Nov. 10 on \$19,000 bonds to construct sewer system; D. W. Herndon, Mayor. (Lately noted.)

Md., Rockville.—City will construct sewer system and sewage-disposal works; 35,600 lin. ft. 6, 8 and 10-in. sewers; disposal plans to consist of Imhoff tank, dosing chamber and sprinkler filter or sand filters; John J. Higgins, Clerk to Mayor and Council, Farmers' Bank & Trust Co. Bldg., Rockville, receives bids until Oct. 7; Ezra B. Whitman, Consult. Engr., 1319 Fidelity Bldg., Baltimore. (See Machinery Wanted.)

Mo., St. Joseph.—Board of Public Works will invite bids to construct sewers in Distrs. 37, 38, 101, 111, 139 and 144.

N. C., Durham.—City will construct 1630 lin. ft. 8-in. terra-cotta sewer; bids until Oct. 3; W. G. Bradshaw, Chrmn. Street Committee. (See Road and Street Work.)

N. C., Winston-Salem.—Forsyth Highway Com. granted franchise S. A. Hutchins and W. S. Alexander to construct sewer system and water-works for suburb known as Ardmore.

Okl., Tulsa.—City will expend \$30,000 to construct 8 and 10-in. sanitary sewers and laterals in additions to city; T. C. Hughes, City Engr. Lately noted as contemplating voting on \$10,000 bonds to continue construction of sewer system.)

S. C., Anderson.—Charleston & Western Carolina Ry., A. W. Anderson, Gen. Mgr., Augusta, Ga., engaged C. J. De Camps, Engr., and City Engr. Sanders to prepare plans and specifications for concrete or brick drain to dispose of surface water which now flows through terminal property.

Tex., Cleburne.—City contemplates voting on \$180,000 bonds to construct sewer system; C. W. Brech, Mayor.

Tex., El Paso.—City purchased 72 acres land on which to build filter system for city

sewage, which now empties in Rio Grande; estimated cost \$25,000. Address The Mayor.

Tex., Granger.—City let contract Dallas Lime & Gravel Co. at \$12,236 to construct sewer system; Engr., Ehlers Engineering Co., Lagrange, Tex.; J. M. Schramm, Chrmn. Sewer Committee. (Call for bids lately noted.)

TELEPHONE SYSTEMS

Ala., Delta.—Delta Rural Telephone Co. inceptd. with capital \$5000.

Ala., Springville.—Springville Telephone Co., capital stock \$1000, inceptd.; J. L. Drennen, Pres., Birmingham; Harris Burns, V.-P., and O. A. Shipman, Secy., both of Springville.

Ala., Springville.—Springville Telephone Co., capital stock \$1000, inceptd.; J. L. Drennen, Pres., Birmingham; Harris Burns, V.-P.; O. A. Shipman, Secy.

Ky., Barhorville.—Cumberland Telephone Co. increased capital stock from \$1000 to \$2500.

N. C., Rutherford County.—Otter Creek Telephone Co., R. F. D. No. 1, Rutherford county, inceptd. with \$1500 capital stock by L. D. Allen and L. D. Hemphill of Union Mills, N. C., and others.

N. C., Raleigh.—Raleigh Telephone Co. will erect 2-story brick building; cost \$4000; F. B. Simpson, Engr. in charge. (Lately noted.)

Tex., Waco.—Texas Telephone Co., capital stock \$2,000,000, inceptd.; will consolidate several telephone exchanges, including Brazos Valley Telegraph & Telephone Co.'s properties; erect 5-story fireproof exchange to cost \$75,000 to \$100,000; present officers of Brazos Valley Company will be officers of new company; J. B. Earle, Pres.; Ben C. Hyde, V.-P.; E. C. Blomeyer, Secy.-Treas. (Lately noted.)

Va., Staunton.—Augusta County Mutual Telephone Co., capital \$25,000, inceptd.; Cyrus B. Cline, Pres., Mt. Solon, Va.; L. B. Stephenson, Secy., Rolfa, Va.

TEXTILE MILLS

Ark., Little Rock.—Cotton Goods.—Chamber of Commerce interested in plan for organization of \$500,000 company to build cotton mills.

Ark.-Tex., Texarkana.—Cotton Goods.—Texarkana Board of Trade endeavoring to secure organization of company to build cotton mill.

Ky., Louisville.—Woolens.—H. W. Reese Woolen Co. organized with Fred A. Reese Pres.; August Weidling, 1st V.-P.; John W. Diecks, 2d V.-P.; E. Drevenstedt, Secy.-Treas. (Lately noted inceptd. with \$50,000 capital stock.)

Tex., Dallas.—Cotton Goods.—Merchants and Manufacturers' Assn., Harry A. Olmsted, Pres., has plan to organize company for construction of cotton mill.

Tex., San Antonio.—Hosiery.—A. M. Walker, Box 323, interested in contemplated establishment of hosiery mill; has not purchased machinery. (See Machinery Wanted.)

Tex., Waco.—Cotton Sacks.—Clifton Mfg. Co. will establish plant to mfr. cotton sacks and bags; will consume 30 bales cotton daily.

WATER-POWER DEVELOPMENTS

Mo., Edgerton.—McCormas Hydro-electric Light Co., capital stock \$50,000, inceptd. by Jos. M. McCormas, Geo. W. Johnson, Wm. T. Mauzey, John T. Jackson and others; plans to construct dam across Platte River near Edgerton, install turbine wheels, generators, etc.; transmit electricity to nearby towns.

WATER-WORKS

Ala., Birmingham.—City voted \$4,500,000 bonds to construct water-works; construction to include pumping station with pumps for 28,000,000 gals. daily capacity, reservoir on Shades Mountain with capacity 30,000,000 gals., reservoir and filter plants near East Irondale, etc.; Julian Kendrick, City Engr. estimates cost at \$4,496,000. (Noted in Aug.)

Ala., Camp Hill.—City, W. C. Newell, Mayor, asks bids until Oct. 15 for water-works construction, including power-house, one 750 and one 500-gal. pumps, 80,000-gal. steel tank on tower, 2500 ft. 8-in. and 800 ft. 6-in. cast-iron pipe, 26 hydrants; Edgar B. Kay, Engr., Tuscaloosa, Ala. (See Machinery Wanted.)

Ark., Sulphur Springs.—City will extend water system. Address The Mayor.

La., Houma.—City will install 3-in. vertical discharge centrifugal pump for minimum capacity of 200 gals. per min. against total

head of 150 ft. direct-connected to 20 H. P. 2200-volt 3-phase 60-cycle motor, latter having starter equipped with no voltage release; also pipe and electric fittings, etc.; bids until Oct. 6. Address The Mayor. (See Machinery Wanted.)

Ga., Helena.—City votes Oct. 17 on \$13,000 bonds to construct water-works and electric-light system; J. S. McLaughlin, Mayor.

Ky., Winchester.—Winchester Water Co., Wm. Wheeler, Pres., contemplates extending mains to Kentucky River.

Md., Princess Anne.—E. C. Cannon will install water system; pump water direct from engine in electric-light plant; lately noted. (See Electric Plants.)

Miss., Meridian.—Tuberculosis Hospital Committee let contract Dalton Electric Co., Meridian, to build water plant for hospital.

Mo., Caruthersville.—City contemplates extending and improving water plant and distribution system; Frank L. Wilcox, Engr., St. Louis, will submit report.

N. C., Tryon.—City will lay 13,000 ft. of 4-in. cast-iron pipe, 4340 ft. of 6-in. cast-iron pipe and addition 4-in., 3-in. and 2-in. cast-iron pipe; Mayor and Comms. receive bids until Oct. 3. (See Machinery Wanted.)

N. C., Weaverville.—Grand View Hotel Co. (J. J. Reagan and others) purchased spring and will construct gravity pipe line about 2 mi. long to carry water from spring to site for contemplated hotel and cottages. (See Hotels, under Buildings Proposed.)

N. C., Winston-Salem.—Forsyth Highway Com. granted franchise S. A. Hutchins and W. S. Alexander to construct water-works and sewer system for suburb known as Ardmore.

Okla., Shattuck.—City contemplates purchasing and installing 100 H. P. Diesel engine in water and electric-light plant. Address The Mayor.

S. C., Fort Mill.—City let contract B. J. Roberts of Atlanta, Ga., at about \$9250 to lay pipe lines for water system; this supercedes contract reported in June as awarded to Frank Moore of Cordele, Ga.; elevated tank with 100,000 gals. completed.

Tex., Pilot Point.—City sold \$14,000 bonds to construct water-works; J. G. Shelton, City Secy. (Noted in July.)

Va., Covington.—City contemplates increasing water supply; consulting with E. T. D. Myers, Engr., Richmond.

Va., Lynchburg.—H. L. Shaner, City Engr., prepared and submitted plans for auxiliary water supply and filtration plant; propose to install auxiliary pumping apparatus at old pump-house, foot of Orange St., to take water from James River in case of accident to gravity water supply; plans call for filtration and aeration of water supply either from gravity or auxiliary system; provide for covering 2 storage reservoirs with reinforced concrete roofs and for changes in pipes, making it possible to supply Rivermont and Daniel's Hill from College Hill reservoir or standpipe instead of from main pipe at Norfolk and Rivermont Aves.; estimated cost \$250,000.

Va., Petersburg.—Central State Hospital, W. F. Drewry, Supt., will build water filtration plant; bids until Oct. 13; Consult. Engr., Robt. D. Budd, Petersburg. (See Machinery Wanted.)

WOODWORKING PLANTS

Ala., Fruitdale.—Hampers, Crates, etc.—Fruitdale Veneering Co. will establish lately-noted plant to mfr. hampers, box shooks and crates; contracted for machinery, cost \$3000; erect \$2000 ordinary-construction building with 7400 ft. surface; J. P. Niles, Pres.; E. D. Jordan, V.-P. and Mgr.; H. Withers, Secy.-Treas.

Ala., Selma.—Wagon Rims, etc.—Selma Spoke Factory is reported to install machinery to mfr. wagon, buggy and automobile rims.

Fla., Williston.—Vegetable Baskets, etc.—Truckers' Mfg. Co. reorganized with G. G. Jackson, Pres.; J. E. Paslay, V.-P.; R. F. Dees, Mgr., and Lee G. Edwards, Secy.-Treas.; purchased additional machinery and will remove plant to new location.

Ga., Bainbridge.—Crates and Baskets.—Elberta Crate Co., J. M. Simmons, Mgr., Marshallville, Ga., will erect plant to mfr. crates and baskets; character and size of buildings not determined; construction by owner; install machinery. (Lately noted as to build crate, basket and box factory.)

Ky., Barbourville.—Dimension and Vehicle Stock, etc.—T. W. Minton & Son organized to build lately-noted plant; T. W. Minton, Pres.; N. E. Minton, Secy.-Treas.; R. B. Minton, Mgr.; erect buildings costing about

\$2500; erection by company; install wood-working machinery; cost about \$7500; band mill, engine and boiler purchased; mfr. dimension stock, vehicle stock and golf shafts, all of hickory. (See Machinery Wanted.)

Ky., Louisville.—Furniture.—Rowe Furniture Co., capital stock \$10,000, incptd. by R. W. Rowe, Jas. H. Gilpin and Eugene Atkinson.

Miss., Greenville.—Staves.—J. J. Russell of Memphis, Tenn., contemplates establishing plant to mfr. slack-barrel staves.

Tenn., Burns.—Hoops.—John and Andrew Dotson will build hoop factory.

W. Va., Glasgow.—Veneer.—J. D. Pribble (Pres. and Gen. Mgr. Monarch Carbon Co.) contemplates erection of plant to mfr. veneers; has not purchased machinery. (See Machinery Wanted.)

FIRE DAMAGE

Ala., Birmingham.—Scudder Ryall's residence; loss several thousand dollars.

Ala., Florida.—Interstate Chautauqua Association's auditorium; loss \$8000.

Ala., Greenfield, R. F. D. from Gurley.—J. H. St. Clair's gin, sawmill and lumber; loss \$2800.

Ala., Paxton.—Z. S. Adams & Co.'s commissary; postoffice; Dr. R. L. Miller's office.

Ala., Yantley.—W. H. Phillips & Sons' sawmill; loss \$5000 to \$7000.

Ark., Beebe.—C. C. Chumley's residence; loss \$5000.

Ark., Heber Springs.—Adrian Hotel, owned by Cyrus F. Crosby; loss \$40,000.

Ark., Rye.—Blankenship Bros.' gin; estimated loss \$3500.

D. C., Washington.—American Ice Co.'s stables at 15th and E Sts. N. E.; loss on building \$4000.

Fla., Bushnell.—C. B. Harrison's store.

Ga., Nashville.—P. A. Lassetter's residence.

Ga., Reynolds.—Ricks Bros.' gin; estimated loss \$7000.

Ky., Cadiz.—Phil Thompson's residence.

Ky., Louisville.—Grocers' Biscuit Co.'s plant at 652-656 S. 7th St.; estimated loss \$115,000.

Ky., Myra.—Greer Bros.' store; loss \$5000.

Ky., Smiths Grove.—William Grump's barn; loss \$3500.

Ky., Sturgis.—Dennis Onan's residence; loss \$3000.

La., New Orleans.—Thos. H. Underwood's residence at 801 Roosevelt Pl.

La., Shreveport.—Shreveport Transfer Co.'s barn; loss \$10,000.

Md., Baltimore.—Maryland Mfg. Co.'s plant at Monument and 11th Sts., East Orangeville; estimated loss \$40,000.

Miss., Scobon.—Scobon Hardware Co.'s building; loss \$8000.

Miss., Wheelers.—Robt. Posey's residence.

Mo., St. Louis.—J. P. Materne Mfg. Co.'s plant at 18th and Gratiot Sts.

* Tex., Dallas.—W. G. Sterrett's residence at Beverly Drive and Preston Rd., Highland Park; loss \$4000.

S. C., Rock Hill.—S. H. White's residence at 216 E. Moore St., owned by Mrs. H. R. McFadden.

S. C., Spartanburg.—Rev. Mr. Pernell's residence in East Spartanburg; loss \$5000.

S. C., St. Matthews.—St. Matthews Oil Mill was wrecked by explosion.

Tenn., Mt. Pleasant.—T. C. Eastland's 2 residences on N. Main St.

Tenn., Shop Spring.—R. B. Denny's residence; loss \$3500.

Tex., Beaumont.—Beaumont Cotton Oil Co.'s hntroom; estimated loss \$40,000.

Tex., Bryan.—L. A. Hamilton's residence on Lamar St.; loss \$12,000.

Tex., Buffalo Gap.—Gulf, Colorado & Santa Fe Ry. station; loss \$3500; F. Merritt, Ch. Engr., Galveston, Tex.

Tex., Fort Worth.—C. H. Bencini's residence; loss \$50,000.

Tex., Hughes Springs.—John Norwood's buildings, loss \$4000; W. D. McMillan & Son's building, loss \$5000.

Tex., San Antonio.—J. P. Forsyth's residence, loss \$4000; J. M. Creswell's residence, loss \$3000.

Tex., San Marcos.—W. D. Glascock's building, occupied by Choice Butter and Egg Produce House; loss on building \$2500.

Va., Norfolk.—Davis Bakery, at 274-276 Market Pl., damaged.

Va., Fork Union.—Horace L. Graham's store.

Va., Montebello.—John Fauber's residence near Montebello.

Va., Norfolk.—Davis' Bakery, Chas. Davis, Propr., 274-276 Brewer St.; estimated loss \$30,000.

W. Va., McMechen.—Newton Whitlatch's residence on High St.; loss \$3000.

W. Va., Moundsville.—S. T. Courtwright Hardware Co.'s building; A. E. Price Har-

ness Co.'s store; Dawson Clothing Co.'s store; total loss \$30,000.

WRECKED BY EXPLOSION

Tex., El Paso.—Moore Iron and Wire Works, 515 W. San Antonio St., damaged; loss \$4000; building owned by R. N. Thom; loss \$1000.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

D. C., Washington.—Jos. B. Colburn, 1204 G St. N. W., is having plans prepared by Speiden & Speiden, 1403 New York Ave. N. W., Washington, for apartment-house on 15th St. between G and H Sts.; 6 stories; tapestry brick; stone trimmings; 70x125 ft.

Ga., Atlanta.—Mrs. G. J. Dallas is erecting apartment-house; 2 suites; cost \$5000; Fritz Wagner, Archt., 1208 Fourth Natl. Bank Bldg., Atlanta.

Ga., Atlanta.—M. L. Rauschenburg will erect 2-story frame apartment-house; two 5-room suites; hardwood floors; furnace heat; cost \$4000; Leila Ross Wilburn, Archt., Peters Bldg., Atlanta.

Ga., Atlanta.—Geo. W. Parrott has plans by Emil C. Selz, Atlanta, for apartment-house; 80x120 ft.; 2 stories; frame; brick veneer; gravel and tin roof; cost \$25,000; steam heat, \$2500; day labor. (Lately noted under Warehouses.)

Mo., St. Louis.—F. Kruse will erect 2-story tenement-house at 5916 Garfield St.; cost \$3700; construction by owner.

Mo., St. Louis.—F. J. Corawell & Sons Co. has plans by P. J. Bradshaw, St. Louis, for apartment-house on Berlin Ave. near Rosedale Ave.; frontage 35 ft.; 3 stories; entrance and entrance hall finished in tile and marble; tile floors in bathroom; English style.

Mo., St. Louis.—J. W. Kemper will erect 2-story flat at 3928 Lafayette Ave.; cost \$5000; construction by owner.

Mo., St. Louis.—James Sullivan will erect 2-story tenement-house at 4017-19 Lucky St.; cost \$4500; construction by owner.

Mo., St. Louis.—W. C. Bosquit will erect 2-story tenement-house at 2935-37 Wyoming St.; cost \$5500; construction by owner.

Mo., St. Louis.—M. G. Mueller will erect 2-story tenement-house at 3948 Lafayette St.; cost \$4500.

Mo., St. Louis.—Kenmare Investment Co., 3807a Ashland Ave., has plans by W. F. Sheehan, 3807a Ashland Ave., St. Louis, for apartments at 4015-23 and 4006-12 De Touhy St.; 23.4x51, 53x55.6 and 45.6x63 ft.; ordinary construction; composition roof; 8 steam and 4 hot-air furnaces; electric lights; cost \$25,000; construction by owner. (Lately noted.)

Mo., St. Louis.—Barbara Voorhees will erect 3 double 3-room flats and alter apartment-house at 4521-23 Kennerly Ave.

Mo., St. Louis.—H. J. Kruse will erect 2-story tenement-house at 4000-02 Natural Bridge St.; cost \$6500.

ASSOCIATION AND FRATERNAL

Tex., Corpus Christi.—A. F. & A. M. are erecting Masonic Temple; cost \$20,000.

Va., Richmond.—Rho Chi Chapter of Richmond College will erect Phi Gamma Delta Fraternity house on college campus; 48x71 ft.; cost \$13,000; Marcus Halett and Roy G. Platt, Archts., Richmond.

BANK AND OFFICE

Fla., New Smyrna.—State Bank of New Smyrna contemplates erecting bank building.

Ga., Etheridge (P. O. at Elberton).—Oglesby Granite Co., 518 Forsyth Bldg., will erect office building; 66x18 ft.; 3 offices; granite rubble construction; galvanized shingles.

Ky., Dawson Springs.—Dawson Springs Bottling Co. plans to erect office and store building. (See Land Developments.)

Mo., Huntsville.—Infirmary.—Randolph County Comms. ordered election in Nov. on \$30,000 bonds for infirmary and \$100,000 bonds for courthouse.

Tex., Dallas.—Samuel, Block, Thomasson & Hill will erect 3-story office building at San Jacinto and Pavilion Sts.; cost \$30,000.

Tex., San Antonio.—National Bank of Com-

merce will not begin erection of building before 1915. (Lately noted.)

Va., Charlottesville.—Charlottesville Natl. Bank, Hollis Rhehart, Pres., will erect building on Main St.

CHURCHES

D. C., Washington.—Congress Heights Baptist Church, Rev. Edw. E. Richardson, pastor, 1001 Alabama Ave. S. E., will erect building; seating capacity about 200; cost \$9000.

Fla., Miami.—Jewish congregation, Wm. Sydney, officiating rabbi, is reported considering erection of synagogue.

Ga., Athens.—First Christian Congregation has plans for building at Prince Ave., Pulaski and Daugherty Sts.

Ga., Marietta.—St. James' Episcopal Church is having plans prepared by A. Ten Eyck Brown, Atlanta, for Sunday-school building; 2 stories and basement; Gothic style; brick foundation; brick veneer and stucco; gravel roof; steam heat; seating capacity of Sunday-school-room, 300; swimming pool in basement, 20x40 ft.; A. Ten Eyck Brown, Archt., Forsyth Bldg., Atlanta; Dr. Noland, Chmn. Bldg. Com., Marietta.

Ky., Earlinton.—Christian church is remodeling building; enlarging main auditorium by addition 15x30 ft., brick-veneering exterior, etc.; construction under supervision of Jack Shanks, Madisonville, Ky.

Miss., Shuqualak.—Methodist church has plans by Burt Stuart, Meridian, Miss., for building; 40x59 ft.; metal-shingle roof; cost \$3000; will receive bids through Dr. J. A. Perry. (Lately noted.)

N. C., Asheville.—First Christian Church will erect Sunday-school building at Haywood and Flint Sts.; 2 stories; assembly hall to seat 250 to 300; P. H. Mears, S. A. Scott and Edwin Nash, Bldg. Com.

N. C., Rutherfordton, Route 2.—Baptist church has plans by Oliver Hill, Rutherfordton, to erect building; 26x47 ft.; brick; metal-shingle roof; cost \$2500; M. D. Hill, foreman, Rutherfordton. (See Machinery Wanted.)

N. C., Salisbury.—Holmes Memorial Methodist Church, Rev. G. W. Vick, pastor, will erect building.

Tex., San Antonio.—Redefel Scholom Congregation, Rev. H. Lubel, rabbi, will erect synagogue; cost \$16,000.

Tex., Wichita Falls.—Church of the Good Shepherd will erect building; cost \$20,000. Address the Rector.

Va., Norfolk.—St. James' Methodist Church, St. James St., South Norfolk, will erect parsonage; later plans to erect \$25,000 church building. Address The Pastor.

Va., Richmond.—Calvary Baptist Church, Rev. Carter A. Jenkins, pastor, opened bids to erect building; R. V. Richardson, Hampton, Va., is lowest bidder at \$36,000; plans by J. M. McMichael, Charlotte, N. C., call for structure 85x85 ft. (Lately noted.)

CITY AND COUNTY

D. C., Washington.—Superintendent's Residence.—Dist. Comms. are having plans prepared by Snowden Ashford, 1617 21st St. N. W., Washington, for \$6000 residence for superintendent of Tuberculosis Hospital at 14th and Upshur Sts.; red brick; stone trimmings; bids reported to be received about Oct. 15.

Fla., Panama City.—Jail, etc.—Bay County Comms., W. H. Marshall, County Clerk, will expend \$70,000 to erect jail and courthouse; 83x170 ft.; fireproof and semi-fireproof; red tile roof; S. J. Welch, Archt., Pensacola. (Lately noted to receive bids until Oct. 5.)

W. Va., Parkersburg.—Infirmary.—Wood County Court, Wm. Dudley, Clerk, receives bids until Oct. 3 to construct infirmary; plans and specifications at office of Theo. T. Sansbury, Archt., Citizens' Bank Bldg., Parkersburg. (Lately noted.)

COURTHOUSES

Ala., Andalusia.—Covington County Comms. will erect courthouse; bids received until Sept. 28; W. F. Simmons, Chrmn. of Board. (Previously noted.)

Fla., Panama City.—Bay County Comms., W. H. Marshall, County Clerk, will expend \$70,000 to erect courthouse and jail lately noted. (See City and County.)

Mo., Huntsville.—Randolph County Comms. ordered election in Nov. on \$100,000 bonds for courthouse and \$30,000 bonds for infirmary.

DWELLINGS

Ala., Anniston.—Thos. E. Kilby is having plans prepared by W. T. Warren, Birmingham, for 2 frame residences.

Ala., Birmingham.—G. F. McHutchinson will erect frame residence; Wm. T. Warren, Archt., Birmingham.

Ala., Birmingham.—H. D. Williams, L. J. Haley, L. B. Leftwich have plans by Bem Price for dwellings; 2 stories and basement; frame; ordinary construction; probably slate roof; hot-air heat; bids opened about Sept. 30.

Ala., Dothan.—S. P. Poyner has plans by C. E. Dirmeyer, Montgomery, for dwelling; 8 rooms; mill construction; metal tile roof; cost \$6000; bids opened Sept. 16; lately noted. (See Machinery Wanted.)

Ala., Huntsville.—L. J. Breed will erect 2-story frame residence; hardwood floors; cost \$3000; Leila Ross Wilburn, Archt., Peters Bldg., Atlanta.

Ala., Mobile.—Thos. H. Moore will erect 8-room residence on Michigan Ave.; cost \$3200.

Ala., New Decatur.—W. H. Simpson opens bids about Oct. 24 to erect dwelling; 50x42 ft.; 2 stories and basement; Georgian style; hardwood floors; ordinary construction; slate roof; hot-water heat; Bem Price, Archt., Birmingham.

Ala., Piedmont.—Geo. E. Barlow is reported contemplating erecting additional dwelling on S. Main St.

Ark., Little Rock.—R. C. Butler will erect 2 bungalows, 4 and 5 rooms; cost \$4500.

Ark., Little Rock.—C. O. Brack is erecting residence; cost \$50,000.

D. C., Washington.—Dist. Comms. are having plans prepared for residence for Supt. of Tuberculosis Hospital. (See City and County.)

D. C., Washington.—Bynum Hinton, 312 Munsey Bldg., will erect residence at 38th St., Reno Rd. and Ingomar St., Chevy Chase Heights.

D. C., Washington.—Harry Wardman, 1430 K St. N. W., is reported to erect 25 residences at 15th and Buchanan Sts. N. W.; 2 stories; 8 rooms and bath.

D. C., Washington.—H. G. Smith has plans by W. R. Talbott, 1314 F St. N. W., Washington, for dwelling at 1312 Emerson St.; cost \$4500; construction by owner.

D. C., Washington.—Shannon & Luchs, 713 14th St. N. W., will erect residence on Keokuk St., Chevy Chase, D. C.; hollow tile; stucco finish; 10 rooms and 3 baths; 3 stories; garage; cost \$11,000; also erect 2 detached dwellings on 14th St. Terrace; 3 stories; 9 rooms and 2 baths; brick.

Fla., Jacksonville.—W. V. Henry will erect two 1-story frame residences; cost \$3000.

Ga., Atlanta.—E. H. Rosencrans is having plans prepared by Morris & Morris, 525 Atlanta Natl. Bank Bldg., Atlanta, for bungalow; brick foundation and front; frame and stucco; electric fixtures; cost about \$3000.

Ga., Atlanta.—W. L. Fain will erect residence in Druid Hills; 2 stories; brick veneer; slate roof; steam heat; hardwood floors; tiled bathrooms; E. C. Wachendorff, Archt., 827 Empire Bldg., Atlanta.

Ga., Hepzibah.—John Palmer will erect dwelling; 40x62 ft.; frame; composition shingle roof; electric lighting; Thos. M. Campbell, Archt., 15 Johnson Bldg., Augusta. (Lately noted.)

Ga., Savannah.—R. P. Warner, Jr., is reported to erect residence on Augusta Rd.

Ky., Louisville.—H. L. Nevin will erect brick dwelling at Edgewood and Everett Aves.; cost \$3000.

Ky., Louisville.—Mrs. J. B. Leet will erect frame dwelling at 228 Shawnee Terrace; cost \$2750.

Ky., Louisville.—A. R. Smith will erect brick-veneer dwelling at 41st St. and Broadway; cost \$5500.

Md., Baltimore.—H. Krieger & Sons are having plans prepared for store and dwelling. (See Stores.)

Md., Baltimore.—Frank Novak, 744 Kenwood Ave., acquired property at Monument

St. and Patterson Park Ave. and will improve with 2-story dwellings.

Md., Baltimore.—E. Tobe, 2403 W. North Ave., will erect bungalow on Garlison Ave. near Carlisle Ave.; 38x52 ft.; garage 24x30 ft.; plans and construction by owner.

Md., Baltimore.—J. F. De Ford receives bids until Oct. 3 to erect residence; 2½ stories; ornamental brick; invited following contractors to estimate: Gladfelter & Chambers, 2074 Woodberry Ave.; G. Walter Tovey, Eutaw and McCulloh Sts.; W. E. Harn Co., 213 N. Calvert St.; Cowan Building Co., 106 W. Madison St.; Edw. Brady & Sons, 113 Cathedral St., all of Baltimore. (Lately noted.)

Md., Baltimore.—Webb & White, Title Bldg., will erect residence on Hermosa Ave.; 2 stories and attic; frame; completion by Dec. 20; cost about \$3000; T. H. Webb, Archt., Title Bldg., Baltimore.

Md., Catonsville.—Arthur C. Montell, Jr., postponed erection of dwelling. (Lately noted.)

Md., Chevy Chase.—Jean Paul Muller, 1510 14th St. N. W., Washington, D. C., is reported having plans prepared for residence at Connecticut Ave. and Lenox St.

Md., Pikesville.—Bolling Barton is reported having plans prepared by Laurence H. Fowler, 347 N. Charles St., Baltimore, for cottage; 2½ stories; frame; slate roof; cost \$10,000.

Md., Rockville.—Rockville Baptist Church, Rev. Oscar Warren Henderson, pastor, will erect parsonage; cost \$6000; Appleton P. Clark, Jr., Archt., 816 14th St. N. W., Washington, D. C.

Mo., St. Louis.—Carondelet Presbyterian Church, Rev. Frank B. Cleland, Pastor, will erect manse.

Mo., St. Louis.—Anthony Cavagnaro will erect residence on Maryland Ave.

Mo., St. Louis.—Dr. L. A. Will will erect bungalow; tile and stucco; garage; cost \$7500.

Mo., St. Louis.—D. C. Kennedy will erect residence in Ste. Genevieve county.

Mo., St. Louis.—C. Swinart will erect 2-story dwelling at 2376 Clarence St.; cost \$3200; construction by owner.

Mo., St. Louis.—David P. Leahy House & Home Co. will erect 25 dwellings in West Walnut Manor in addition to those under construction.

Mo., St. Louis.—Eugene B. Stinde has plans by Roth & Study, St. Louis, for residence in Jackson Park; Italian style; hollow tile; exterior walls covered with pebble-dash; red Italian tile roof; terrace with wrought-iron railing.

Mo., St. Louis.—J. H. Preiss is interested in erection of number of dwellings.

N. C., Asheville.—Grand View Hotel Co. will erect number of cottages. (See Hotels.)

N. C., Burlington.—Almance Insurance & Real Estate Co. will erect 2 dwellings; 2 stories; frame; stone and brick foundations; 8 and 10 rooms; furnace heat; hardwood floors; cost \$6500; Leila Ross Wilburn, Archt., Peters Bldg., Atlanta.

N. C., Nashville.—Mrs. Anna B. Bunn has plans by Jno. C. Stout, Rocky Mount, N. C., for dwelling; cost \$10,000.

N. C., Rocky Mount.—L. D. Harper has plans by Jno. C. Stout, Rocky Mount, for dwelling; cost \$10,000.

N. C., Rocky Mount.—J. T. Lassiter has plans by Jno. C. Stout, Rocky Mount, for dwelling; cost \$5000.

N. C., Rocky Mount.—J. W. Keel has plans by Jno. C. Stout, Rocky Mount, for dwelling; cost \$10,000.

N. C., Salisbury.—Frank A. Rankin has plans by F. L. Bonfoey, Charlotte, for 2 dwellings; 5 and 6 rooms; ordinary construction; shingle roof; grates; electric lighting; cost \$1500 and \$2500; day labor. (Lately noted.)

N. C., Stantonburg.—Ben Paschal has plans by Jno. C. Stout, Rocky Mount, for dwelling; cost \$4000.

Okla., Muskogee.—Richard Colemeyer will erect 5-room brick residence.

S. C., Florence.—Clyde Gregg Brown will erect 2-story residence.

S. C., Greenville.—Chas. Kloeckler will erect dwelling at McGee St. and East Ave.; cost \$4500; 40x50 ft.; ordinary construction; shingle roof; plans and construction by owner.

S. C., Greenville.—T. C. Gower will erect \$2800 cottage on Whitsett St.

Tenn., Columbia.—W. B. Greenlaw will erect 2 residences; frame; 5 rooms; cost \$3500.

Tex., El Paso.—P. Henderson will erect \$8000 residence.

Tex., Fort Worth.—Jack F. Ryan has plans by Muller & Pollard, Fort Worth, for residence; mission style; 70 ft. deep; 7 rooms, bath and garage; green Spanish tile roof; hollow tile and white stucco walls; cost \$10,000.

Tex., Houston.—G. H. Hermann will not erect dwelling as lately reported.

Tex., Lockhart.—R. C. Chew will rebuild dwelling; plans not determined. (Lately reported burned.)

Va., Norfolk.—Willis Company will erect three 2-story frame residences on 36th St.; cost \$6000.

Va., Norfolk.—St. James' Methodist Church, St. James St., South Norfolk, will erect parsonage. (See Churches.)

Va., Richmond.—Richmond College will erect residences for Dr. J. C. Metcalf, Professors Bingham and Loving.

Va., Richmond.—J. L. Davis will erect 2-story brick dwelling at Park Ave. and Addison St.; cost \$5500.

W. Va., Huntington.—Lizzie Hogg will erect 12-room double brick residence on 4th St.; cost \$4000.

W. Va., Huntington.—S. G. Biggs will erect brick residence at Elm St. and Fifth Ave.; cost \$4500.

GOVERNMENT AND STATE

Md., Baltimore.—Armory.—Armory Commission, Col. H. C. Jones, Chrmn., Chamber of Commerce, selected site of 89,505 sq. ft. in block bounded by St. Paul St., Calvert St., North Ave. and 20th St. for Fourth Regiment Armory; will ask Legislature for \$450,000.

Md., Belair.—Armory.—Commission for Erection of Armory, M. A. Reckord, Chrmn., receives bids until Oct. 12 to erect armory; cost about \$30,000; plans and specifications at office of John B. Hamme, Archt., York, Pa. (Previously noted.)

Tenn., Burns.—Postoffice.—W. E. Alsbaugh, postmaster, will erect postoffice building.

HOTELS

N. C., Rocky Mount.—H. Skalowski and A. Cohen will not at present erect hotel; Jno. C. Stout, Archt., Rocky Mount. (Lately noted.)

W. Va., Berkeley Springs.—Berkeley Corporation has sketches prepared by Boal & Brown, 1725 H St. N. W., Washington, D. C., for hotel; 4 stories; hollow tile or brick; cost about \$100,000; details not yet considered.

MISCELLANEOUS

D. C., Washington.—Hospital.—National Vaccine and Antitoxin Institution, D. T. Scott, Prest., Chevy Chase, D. C., will erect \$45,000 experimental station on Rockville pike; will erect several buildings, including vaccine and antitoxin laboratories; probably concrete; fireproof.

Fla., Brooksville.—Postoffice.—A. Keathley will erect postoffice building to replace structure lately noted burned at loss of \$4000.

Ga., Atlanta.—Hall.—T. O. Poole will erect store and hall. (See Stores.)

Ga., Jeffersonville.—Stable.—O. T. Chapman will erect store and livery stable. (See Stores.)

Ky., Lexington.—Stables.—Luther Stivers will erect warehouse with stalls for several hundred horses in basement. (See Warehouses.)

Mo., St. Louis.—Hospital.—Barnes Hospital Assn., it is reported, plans to construct building to cost \$100,000; brick; 6 stories and basement; 37x103 ft.; Thos. C. Link, Archt., Carlton Block, St. Louis.

Mo., St. Louis.—Market.—Merchants and Consumers' Market-House Assn., Victor Diesing, Prest., organized with \$125,000 capital stock; acquired site and will erect market; 180x210 ft.; 2 stories; cost, including site, \$190,000; C. B. Yoder & Co., Archts.

Tenn., Burns.—Postoffice.—W. E. Alsbaugh, postmaster, will erect postoffice.

Tenn., Knoxville.—Clubhouse.—H. H. Club of Knoxville High School is having plans prepared by Nathan Moore for clubhouse.

Tex., Bay City.—Clubhouse.—Live Oak Hunting Club will erect clubhouse on game preserve about 15 miles southeast of Bay City.

Tex., Dallas.—Grandstand, etc.—University of Dallas Club is reported to expend \$5000 to erect grandstand and remodel athletic grounds; Robt. H. Vogel, Jas. O'Conner, Dan Sullivan, Jr., and others, Com.

RAILWAY STATIONS, SHEDS, ETC.

Ark., Pine Bluff.—St. Louis, Iron Mountain & Southern R. R., J. R. Stephens, Ch. Engr., St. Louis, is reported to erect passenger station.

Ky., Earlinton.—Louisville & Nashville R. R., W. H. Courtenay, Ch. Engr., Louisville, Ky., will expend \$12,000 for improvements to passenger station, concrete platform and train shed.

Md., Easton.—Pennsylvania R. R. Co. is reported to erect 100-ft. freight house on East St. Address Elias B. Josh, Wilmington, Del.

Mo., Macon.—Wabash R. R., A. O. Cunningham, Ch. Engr., St. Louis, will erect \$15,000 depot.

Mo., Plattsburg.—C. A. Morse, Ch. Engr., Chicago, Rock Island & Pacific R. R., Chicago, states he knows nothing of erection of depot. (Lately reported.)

N. C., Stanfield.—Norfolk & Southern R. R., F. L. Nicholson, Ch. Engr., Norfolk, Va., will erect No. 2 combined freight and passenger station; frame; metal roof; date of building not determined.

Tex., Galveston.—Gulf, Colorado & Santa Fe R. R., F. Merritt, Chief Engr., will remove tower on old Union Station and Santa Fe general office building; remove parapet walls and construct walls to conform with new office building; also construct chimney in rear for heating system; cost of improvements, \$12,000; has not definitely determined to build lately-noted umbrella sheds; plans and estimates not made.

W. Va., Janelaw.—Baltimore & Ohio R. R. Co., F. L. Steuart, Chief Engr., Baltimore, will rebuild station, using company's force; cost \$2500. (Lately noted burned.)

SCHOOLS

Ala., Birmingham.—Jefferson County Board of Education is reported to erect high school.

D. C., Washington.—District Comms. open bids in October to rebuild Western High School; 70x263 ft.; 43 rooms; fireproof; brick and concrete; roof garden for open-air classes; cinder, concrete and slag roof; heating plant in place; cost (without mechanical equipment) \$145,000; repairing lighting plant, \$5000; Snowden Ashford, Archt., District Bldg., Washington; subcontracts include steel work, fireproofing, plastering, mill work and carpentry, painting, glazing and plumbing; plans also completed to erect Colored High School; brick and concrete; 70 rooms; appropriation \$500,000; also Park View School; 16 rooms; cost \$132,000. (Previously noted.)

Fla., Tallahassee.—State Board of Control, Jacksonville, rejected all bids and asked for revised bids to erect training school at Agricultural and Mechanical College. (Lately noted.)

Fla., West Tampa.—School Board opened bids to erect school in Ellinger City and addition to West Tampa school; Logan Bros., Tampa, are lowest bidders at \$27,357; John W. Biggars, Archt., West Tampa. (Lately noted.)

Ga., Buchanan.—Buchanan School Dist. voted \$15,000 bonds to erect school; opens bids about Dec. 1; address proposals to Mr. Buliard, Chrmn. of Com. (Lately noted.)

Ga., Cleveland.—Cleveland School Dist. voted \$10,000 bonds to erect school; J. B. Skelton, Chrm. of Board of Trustees.

Ky., Barbourville.—School Board will soon begin erection of proposed school, for which \$17,500 bonds were sold.

Ky., Covington.—City will erect 20-room fireproof school building; plans not determined; address School Board, City Hall, Covington. (Lately noted to vote on \$165,000 for schools.)

La., New Orleans.—Dept. of Public Finances, Accounting Div., A. G. Ricks, Commr., receives bids until Oct. 5 to erect 1-story-and-basement frame school in block bounded by Milne, Polk, Brooks and Iberville Sts.; plans and specifications and blank forms at office of City Engr.

Md., Highland.—Howard County Comms., Ellicott City, Md., appropriated \$4000 to enlarge Highland High School.

Miss., Louisville.—Town will erect school; 40x47 ft.; 2 stories and basement; brick; metal roof; heating and lighting extension of present system; cost \$3500; day labor. (Lately noted selling bonds to erect school.)

N. C., Asheville.—St. Genevieve's College postponed erection of addition to school. (Lately reported.)

N. C., Oriental.—Pamlico county sold \$10,000 bonds and will erect school; Taylor B. Attmore, Supt. of Public Instruction, Bayboro,

N. C.; structure of 4 classrooms and auditorium; fireproof; slate roof; cost \$7000; steam heat, \$1500; Patter & Seifert, Archts., Newbern, N. C.; address proposals to J. W. Miller. (See Machinery Wanted.)

N. C., Greensboro.—Greensboro College for Women is reported to erect conservatory of music.

N. C., Red Oak.—John C. Stout, Rocky Mount, N. C., prepared plans for Farm Life School; cost \$15,000.

N. C., Roanoke Rapids.—John C. Stout, Rocky Mount, N. C., prepared plans to remodel school; cost \$15,000.

N. C., Rosemary.—John C. Stout, Rocky Mount, N. C., prepared plans for graded school; cost \$25,000.

Tenn., Chattanooga.—Hamilton County School Board, Sherman W. Beck, Chrmn., will erect school at King's Point.

Tenn., China Springs.—McLennan county, Geo. N. Denton, Judge, declared void \$12,000 bond issue lately noted voted.

Tenn., Cleburne.—City contemplates voting on \$125,000 bonds to erect ward schools; C. W. Breech, Mayor.

Tenn., Dallas.—Maple Lawn School Dist. will erect school at Cedar Springs and Park Sts., Dallas county; 60x50 ft.; slate roof; heating plant to cost \$350; sidewalk or vault lights to cost \$400; date of opening bids undecided; cost \$10,500; address C. H. Hawes, R. F. D. No. 6, Dallas. (Lately noted.)

Tenn., Houston.—H. L. Washburn, County Auditor, receives bids until Oct. 12 for material and erection of laundry and barn for Harris County School for Girls; plans and specifications at office of Ennis Cargill and Fred Teich, Archt., Houston.

Tenn., San Antonio.—Bexar County Common School Dist. No. 18 voted \$24,000 bonds for schools. Address Dist. School Trustees.

Tenn., Terrell.—Evening Star School Dist. will issue bonds to erect school. Address Dist. School Trustees.

Va., Alexandria.—Com. on Public Property and Com. on Schools will, it is reported, receive bids until Oct. 9 to erect high school on Cameron St.; probable cost \$50,000; E. C. Dunn, City Engr. (Lately noted.)

Va., Emporia.—John C. Stout, Rocky Mount, N. C., prepared plans for graded school; cost \$20,000.

Va., Lexington.—Washington and Lee College opens bids Oct. 7 to erect gymnasium; 2 stories, basement and subbasement; fireproof; metal shingle roof; steam heat; electric lighting; cost \$60,000; Flournoy & Flournoy, Archts., 701 Wilkins Bldg., Washington, D. C.; contractors estimating are: W. B. Snead & Co. and C. W. Hancock & Sons, both of Lynchburg, Va.; Nash Jones Co., Law Bldg., Norfolk; Geo. Leigh & Bros., Lexington; Wise Granite & Construction Co. and P. J. White & Sons, both of Richmond; Willard, Boggs & Co., Spartanburg, S. C.; J. L. Crouse, Greensboro, N. C.; King Lumber Co., Charlottesville, Va.; James G. Doak & Co., 1420 Chestnut St., and James H. Wells, both of Philadelphia; Cauldwell-Wingate Co., 381 4th Ave., and W. H. Fissell & Co., 1133 Broadway, both of New York; Wells Bros. Co., Riggs Bldg., and Richardson & Burgess, 1413 H St. N. W., both of Washington; John Thatcher & Son, 60 Park Ave., Brooklyn, N. Y.; M. B. Stoddard, Staunton, Va.; J. W. Davis, Newport News, Va.; excavation, concrete work, terrazzo, tile and painting not in general contract. (Lately noted.)

Va., Richmond.—Richmond College will erect residences for Dr. J. C. Metcalf, Profs. Bingham and Loving.

Va., Richmond.—Manchester Dist. School Board will erect 2-room school in Falling Creek Dist.

Va., Richmond.—City, C. P. Walford, Clerk and Supvr., had plans revised and will ask bids Oct. 12 to erect Nathaniel Bacon school; 12 rooms and auditorium; ordinary construction; hot-air heat; slag roof; Carneal & Johnston, Archts., Chamber of Commerce Bldg., Richmond. (Lately noted.)

STORES

Ala., Tuscaloosa.—J. H. Flitts, Jr., will erect 2-story store building; 50x100 ft.; brick; Barrett 5-ply roofing; E. J. Ostling & Son, Archts., 7th St., Tuscaloosa.

Fla., Bradentown.—John W. Cummings will erect brick business building; 50x80 ft.; 2 stories.

Fla., Brooksville.—J. A. Jennings is reported to rebuild structure lately noted burned at loss of \$10,000.

Ga., Atlanta.—T. O. Poole will erect 2-story brick business building; 40x60 ft.; 2

stores on lower floor; upper floor for hall; plate-glass front; tar and gravel roof; concrete floors; Lella Ross Wilburn, Archt., Peters Bldg., Atlanta.

Ga., Atlanta.—Jacob Schane will expend \$5000 to erect mercantile building; 24x62 ft.; brick; tar and gravel roof; Walker & Chase, Archts., Atlanta; bids opened in about 3 weeks. (Lately noted.)

Ga., Jeffersonville.—O. T. Chapman will erect store and livery stable; 50x100 ft.; brick.

Ky., Dawson Springs.—Dawson Springs Bottling Co. plans to erect store and office building. (See Land Developments.)

Md., Baltimore.—Geo. Walter, 24 W. Lexington St., will improve store front at 7 W. Lexington St.

Md., Baltimore.—Geo. M. Doebriener, 1407 E. Baltimore St., is having plans prepared by Callis & Callis, 2055 Kennedy Ave., Baltimore, for alterations to building at 3105 W. North Ave. for store and dwelling; bids being received; Fidelity Construction Co., 1709 W. Lexington St., Baltimore, is estimating.

Md., Baltimore.—H. Krieger & Sons are having plans prepared by John Freund, Jr., Hoffman Bldg., Baltimore, for store and dwelling at 605 S. Charles St.; 3 stories; brick; stone trimmings; concrete foundation.

S. C., Chester.—J. A. Barron will erect 2 brick stores on Wyle St.; also construct brick front in Dreamland Theater and later erect fireproof theater.

Tenn., Alpine.—J. M. Radford will erect business building.

Tenn., El Paso.—Phoenix-El Paso Building Co. will erect brick store building in East El Paso Addition; also erect brick building in Bassett Addition; cost \$7000.

Tenn., LaMarque.—A. L. Bogatto will erect store to replace structure lately noted burned; fireproof.

Va., Norfolk.—John L. Roper will erect 7 stores at Granby and Freemason Sts.; 1 story; white terra-cotta and plate glass; Rossel Edward Mitchell and F. Nelson Wilcox, Archts., Norfolk.

Va., Norfolk.—W. H. Sterling, Jr., and Henry Kirm will erect 1-story brick store on Monticello Ave.; cost \$2931.

Va., Roanoke.—Martin & Massie will improve building on Kirk St. between Jefferson and Nelson Sts.; cost \$3000.

W. Va., Janeleu.—K. B. Renner and G. W. Taylor will erect store and warehouse. (See Warehouses.)

W. Va., Parkersburg.—Mike Abdella acquired St. James Hotel building at 7th and Lynn Sts., and will remodel for business purposes.

THEATERS

Ky., Louisville.—Knickerbocker Theater Co., capital stock \$5000, incptd. by C. W. Barnes, C. R. Smith and J. L. Duncan.

S. C., Chester.—J. A. Barron will erect brick front in Dreamland Theater and later erect fireproof theater. (See Stores.)

WAREHOUSES

D. C., Washington.—Robt. B. Caverly and others indefinitely postponed erection of warehouse; Averill & Adams, Archts., 719 Union Trust Bldg., Washington. (Previously noted.)

Ga., Milledgeville.—Horne-Andrews Commission Co. will erect temporary warehouse with capacity for 2000 bales cotton; corrugated sheet iron; fireproof.

Ky., Lexington.—Luther Stivers will erect loose-leaf tobacco warehouse; 122x445 ft.; stalls for several hundred horses in basement; cost \$35,000 to \$40,000.

Ky., Mt. Sterling.—White Hall Loose Leaf Tobacco Warehouse, capital stock \$15,000, incptd. by W. C. Clay, C. W. Kirkpatrick and R. T. Judy.

Ky., Paducah.—Paducah Warehouse Co., capital stock \$5000, incptd. by H. R. Lindsey, W. P. Paxton and W. R. Ash.

Md., Baltimore.—Crown Cork & Seal Co. has plans by Otto G. Simonson, Maryland Casualty Tower Bldg., Baltimore, for storage building at Highlandtown; 1 story; 106x75 ft.; reinforced concrete; fireproof; concrete roof covered with slag; steam heating; electric lighting; contractors estimating are West Construction Co., Knickerbocker Bldg.; Cowan Building Co., 106 W. Madison St.; Henry Smith & Sons Co., German and Light Sts.; Morrow Bros., Fidelity

Bldg., all of Baltimore; bids received until Oct. 1.

Md., Baltimore.—H. H. Taylor, 11-13 S. Gay St., invited following contractors to estimate on erection of warehouse at 6 S. Frederick St. for Crucible Steel Co.: Chas. L. Stockhausen Co., Inc., Marine National Bank Bldg.; Consolidated Engineering Co., Calvert Bldg.; Edw. Watters & Co., 509 N. Charles St.; A. F. West, 15 E. Fayette St.; Cowan Building Co., 106 W. Madison St.; H. H. Brown, 109 Clay St.; all of Baltimore; plans by Owens & Sisco, Continental Bldg., Baltimore, call for 2-story structure; brick and steel; 30x75 ft.; bids opened Sept. 30. (Lately noted.)

N. C., Aberdeen.—Sand Hill Board of Trade Warehouse Co. incptd. with \$5000 capital stock by H. A. Page, Roger A. Burby and others.

N. C., Battleboro.—M. C. Braswell has plans by John C. Stout, Rocky Mount, N. C., for brick warehouse; cost \$5000.

N. C., Burgaw.—Burgaw Union Warehouse Co., G. C. Highsmith, Pres., will erect cotton warehouse; 40x100 ft. (Lately noted incorporated.)

N. C., Marshville.—Marshville Cotton Warehouse Co. incptd. with \$10,000 capital stock by P. P. W. Plyler, B. H. Griffin and others.

N. C., Timberland.—Timberland Cotton Warehouse Co. incptd. with \$10,000 capital stock by N. F. Sinclair, L. W. Parish and others.

N. C., Washington.—Beaufort County Storage Warehouse Co. incptd. with \$100,000 by A. M. Dumay, Geo. Hackney, Jr., Geo. T. Leach and others.

Okla., Ardmore.—Ardmore Milling Co. will erect addition to warehouse; 44x40 ft.

Okla., Ashland.—Ashland Warehouse Co. incptd. with \$5000 capital stock by R. B. Johnson, A. Scrimgeour, H. P. Halzlip and others.

Okla., Cathay.—Cathay Warehouse Assn. incptd. by J. C. Smock, E. G. Bailey and W. H. Rust of Eufaula, Okla.

Okla., Mannsville.—Mannsville Warehouse Storage Co. incptd. with \$2500 capital stock by T. N. Lyon, R. B. Hill and E. B. Wolverton.

Okla., Oklahoma City.—Rock Island Cotton Warehouse Co. incptd. with \$3000 capital stock by Henry Vail Haley, E. R. Alexander, Fred S. Cardwell and others.

Okla., Oklahoma City.—Rock Island Cotton Warehouse Co. incptd. with \$5000 capital stock by Henry Vail Haley, E. R. Alexander and Fred S. Cardwell.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

D. C., Washington.—Estate of Annie Donnelly let contract to E. J. De Lacy, 64 Rhode Island Ave. N. E., Washington, to erect two-story brick apartment-house at 916 E. Capitol St. N. E.; cost \$5743; A. S. J. Atkinson, Archt., 3801 Macomb St. N. W., Washington.

Ga., Atlanta.—J. C. Gavan let contract to C. Shelverton, 1919 Fourth National Bank Bldg., Atlanta, to erect apartment-house; 2 5-room suites; brick veneer; slate roof; furnace heat; tiled bathrooms; cost \$7000.

Mo., St. Louis.—R. B. Winn let contract to A. U. Hart, St. Louis, to erect two 2-story tenement-houses at 4455-57 Lee St.; cost \$3000.

Mo., St. Louis.—Florence Draper let contract to C. Wilcox, St. Louis, to erect 2-story flat at 7881 Florissant St.; cost \$3350.

Mo., St. Louis.—Bright Investment Co. let contract to A. Craig, St. Louis, to erect 2-story tenement-house at 4352-54 Forest Park Ave.; cost \$7000.

Mo., St. Louis.—F. Kowalkoski let contract to F. Kircher, St. Louis, to erect 2-story tenement-house at 4458 Margarette St.; cost \$5000.

Mo., St. Louis.—Trades Investment Co. let contract to A. Beckmeier, St. Louis, to erect two 2-story tenements at 3506-12 California St.; cost \$10,000.

Mo., St. Louis.—W. J. and E. Harman let contract to General Contracting Co., St. Louis, to erect 2-story tenement-house at 4030 DeTonty St.; cost \$5000.

Mo., St. Louis.—John Kaiser let contract to Wm. Kaiser, St. Louis, to erect Juliana Apartments at Tennessee Ave. and Osceola St.; cost \$15,000; plans by and construction under supervision of Ernest J. Hess, St. Louis.

Mo., St. Louis.—A. Buxell let contract to H. A. Huger, St. Louis, to erect 2-story tenement-house at 5321 Terry St.; cost \$3900.

Okla., Seminole.—Seminole Public Warehouse Assn. incptd. with \$5000 capital stock by A. G. Mayhue, S. D. Powell and J. R. Smith.

Okla., Soper.—Soper Warehouse Co. will erect cotton warehouse; galvanized iron; cost \$1000. (Company lately noted organized with \$3000 capital by H. L. Burrus and others.)

Okla., Stonewall.—Farmers' Warehouse incptd. with \$2000 capital stock by W. H. Stevens, B. F. Sullivan and T. J. Smith.

S. C., Gaffney.—Farmers' Warehouse Co., W. S. Wilson, Mgr., will erect cotton warehouse; capacity 6000 bales.

S. C., Charleston.—Charleston Warehouse & Forwarding Co. incptd. by H. W. Blachoff and E. S. Barlow.

S. C., McBee.—Farmers' Warehouse Co. incptd. with \$1500 capital stock by F. E. Kerr, J. D. Laurence and J. D. Ingram.

S. C., Norway.—Farmers & Merchants' Warehouse Co. incptd. with \$2000 capital stock by H. P. Fulmer, C. T. Dowling, H. E. Garlick and others.

S. C., Turbeville.—Farmers' Cotton Warehouse Co. incptd. by D. E. Turbeville, D. M. Turbeville, J. C. Dennis and D. L. Green.

Tenn., Bastrop.—J. W. Kennedy is erecting cotton warehouse with capacity of 3000 bales.

Tenn., Ennis.—Ennis Cotton Warehouse Co. incptd. with \$15,000 capital stock by E. Raphael, E. M. Thomas and T. F. Clark.

Tenn., Fort Worth.—Fort Worth Cotton Warehouse Co. organized with \$5000 capital stock to erect cotton warehouse with capacity of 150,000 bales; fireproof construction.

Tenn., Lancaster.—Lancaster Cotton Warehouse Co. incptd. with \$6000 capital stock by K. L. Whote, F. M. Hammond and S. L. Randlett.

Tenn., Kerens.—Kerens Warehouse Co. incptd. with \$3500 capital stock by J. E. Simmons, J. A. Anderson and J. L. Whorton.

Tenn., Mineral Wells.—Mineral Wells Cotton Warehouse Co. incptd. with \$2000 capital stock by K. McBrayer, W. C. Poston and A. L. Howard.

Va., Suffolk.—Virginia-North Carolina Peanut Growers' Assn. will erect warehouse and cleaner; will organize company with \$25,000 capital stock.

W. Va., Janeleu.—K. B. Renner and G. W. Taylor will rebuild burned structure of People's Feed Co.; 60x35 ft.; concrete blocks; fireproof; iron roof; gas heat for store and warehouse; construction to begin Oct. 15; cost \$2500. (Lately noted burned.)

Mo., St. Louis.—Colfax Real Estate Co. let contract to B. J. Charleyville, St. Louis, to erect 2-story store and apartment-house at 525-29 DeBaliviere St.; cost \$8000.

Tenn., Beaumont.—H. A. Perlestein let contract to erect apartment and store building. (See Stores.)

ASSOCIATION AND FRATERNAL

Ky., Louisville.—Peters Burghard Co., 800 S. 13th St., Louisville, has contract for cut-stone work, and J. F. Wagner Sons Co., 1145 S. 7th St., Louisville, for roofing and sheet-metal work on Y. M. C. A. building, for which A. Markham Co., 434 S. Floyd St., Louisville, has general contract; Joseph & Joseph, Archts., Louisville. (Lately noted.)

Ky., Louisville.—Pythian Mutual Industrial Assn. will expend \$100,000 (cost without mechanical equipment) to erect lodge and hotel building; fireproof; composition roof; direct low-pressure steam heating system; Henry Wolters, Archts., Louisville; contract (lately noted) let to Falls City Construction Co., Louisville.

Ky., Maysville.—Additional contracts for erection of 3-story-and-basement lodge building for I. O. O. F. have been let as follows: Structural Iron, Pothoff Construction Co., Front and Harriett Sts., Cincinnati; masonry, Wm. D. Oliver, 125 E. 5th St., Newport, Ky.; composition roof and sheet-metal work, Rasp & Sons, Maysville; Weber, Werner & Adkins, Archts., Cincinnati; McDowell & Case, Gen. Contrs., Maysville; cost \$25,000. (Lately noted.)

Okla., Tulsa.—Brickner-Laws Construction Co., Tulsa, general contractor to erect 91x131-ft. 4-story and basement fireproof Y. M. C. A. building, let sub-contract to O. G. Watt, Tulsa, for plumbing and heating, and to Electric Supply Co., Tulsa, for wiring; Shattuck & Hussey, Archts., 19 S. La Salle St., Chicago. (Lately noted.)

Tex., Arlington.—A. F. and A. M. let contract at \$21,499 to B. F. Nelson, Arlington, to erect hospital at Home for Aged, near Arlington; fireproof; 2 stories and basement; 22 wards; Hubbell & Green, Archts., North Texas Bldg., Dallas. (Lately noted.)

Va., Staunton.—Y. M. C. A. let contract to Cullen-Vaughan Co., Hamilton, O., to erect building; 4 stories; 83x124 ft.; cost about \$100,000; Shattuck & Hussey, 19 S. LaSalle St., Chicago, and T. J. Collins & Son, Asso. Archts., Staunton. (Lately noted.)

W. Va., Matoonka.—Pythian Building Association, A. Buchanan, Secy., let contract to erect lodge and store building; 32x54 ft.; 3 stories and basement; ordinary construction; built-up roof; hot-water heat; electric lighting; cost \$9000; A. F. Wyson, Archt., Princeton, W. Va. (Lately noted.)

W. Va., Parkersburg.—A. F. and A. M. let contract to Prescott Construction Co., Warren, O., to erect Masonic Temple; Frank L. Packard, Archt., Columbus, O. (Prescott Construction Co., Warren, O., and Ragland, Baxter & Morford Co., Nashville, Tenn., lately noted as lowest bidders at about \$107,000.)

BANK AND OFFICE

Ark., De Witt.—First National Bank let contract to R. P. Blythe, Dermott, Ark., to erect building; 2 stories; 25x75 ft.; ordinary construction; composition roof; electric lighting; Chas. L. Thompson, Archt., Little Rock. (Lately noted.)

D. C., Washington.—National Safe Deposit & Trust Co. let contract to Skinner & Garrett, Evans Bldg., Washington, to repair 2-story brick offices at 815-17 15th St.; cost \$8000; C. A. Harding, Archt., Woodward Bldg., Washington.

Mo., Farley.—Farmers' Bank let contracts to Henry Oberdick, Farley; J. Roth and S. C. Hoffman, Leavenworth, Kans., and E. E. Anderson, Rushville, Mo., to erect bank building; 20x38 ft.; ordinary construction; gravel roof; cost \$2500; no general contract.

S. C., Anderson.—Anderson Machine & Foundry Co., Anderson, has contract for steel work on building for Anderson Development Co. (See Theaters.)

Va., Gloucester.—First National Bank let contract to R. V. Richardson, Hampton, Va., to erect bank building; cost \$8597.

CHURCHES

Ga., Atlanta.—Unitarian church let contract to Calvin Shelverson, 1018 Fourth National Bank Bldg., Atlanta, to erect building; brick; slate roof; cost \$16,000; W. A. Edwards, Archt., Atlanta.

Ga., Cornelia.—Baptist church, Rev. W. J. Barton, pastor, has plans by J. E. Greene, Birmingham, to erect building; 70x71 ft.; 24 ft. high; metal shingle roof; cost \$8000 to \$10,000; contract let to W. B. Ellard, Cornelia; bids opened Sept. 24; lately noted. (See Machinery Wanted.)

Ga., Monroe.—Monroe Baptist Church let contract to R. W. & E. W. Smith, Cartersville, Ga., to erect building; tile roof; blast system of heating; cost \$25,000; W. A. Edwards, Archt., Atlanta. (Previously noted.)

Md., McDaniel.—Methodist Protestant Church let contract to Mr. Wyatt, Salisbury, Md., to erect building.

N. C., Winston-Salem, Sta. Woughtown.—First Presbyterian Church let contract to M. L. Hollady to erect building; 62x76 ft.; ordinary construction; shingle roof; hot-air heat; electric lighting; cost \$6500; W. C. Northrup, Archt., Winston-Salem. (Lately noted.)

Tex., Freeport.—Presbyterian church let contract to F. N. Hefflin to erect building; 40x42 ft.; cement pier foundation; storm-sheathed exterior; inside ship-lapped; Gothic style; W. A. Randle, Archt.

Va., Lynchburg.—Bethesda Presbyterian Church let contract to Smoot & Sheehan, Lynchburg, to erect building; 35x49 ft. and 35½x37½-ft. addition; ordinary construction; stucco; shingle roof; cost \$4375; furnace heat; electric lighting; Heard & Caldwell, Archts., Lynchburg. (See Machinery Wanted.)

CITY AND COUNTY

Fla., Jacksonville.—Jail, etc.—County Commissioners, J. H. Patterson, Chrmn., let contracts to W. P. Richardson & Co., Jacksonville, to erect jail, including jailer's residence and criminal courthouse in connection therewith; cost about \$188,000; H. J. Klutho, Archt., St. James Bldg., Jacksonville; also courthouse annex to cost \$179,000; 10x102 ft.; fireproof; Barrett's specification tar and

gravel roof; steam heat in general contract; electric lighting; Talley & Summer Co., Archt., St. James Bldg., Jacksonville. (Lately noted.)

Fla., Miami.—Fire Station.—City let contract to W. F. Yarborough, Miami, to erect fire station; 33x40 ft.; fireproof; reinforced concrete; red tile roof; cost \$5300; Edw. F. O'Brien, Jr., Archt., 1008 Ave. K, Miami.

Fla., Tampa.—City Hall.—City will expend \$50,000 (cost without mechanical equipment) to erect Carnegie library; 55x120 ft.; reinforced concrete; Spanish tile roof; gas heat; electric lighting; Fred J. James, Archt., Tampa; contract (lately noted) let to Aulick, Bates & Hudnall, Tampa.

Miss., Meridian.—City Hall.—City let contract to Hancock & McArthur, Meridian, to erect city hall; 86x114 ft.; 3 stories; fireproof; Barrett's specification roof; cost \$88,000; P. J. Krouse, Archt., Meridian. (Lately noted.)

N. C., Wilmington.—Fire Station.—City let contracts at \$6473.75 to L. H. Vollers, Wilmington, to erect fire station at 5th and Castle Sts., and at \$349.55 to J. C. McCartney & Son, Wilmington, for plumbing; plans by J. F. Gause, Wilmington, call for structure 28x75 ft.; brick; slate roof; electric lights.

COURTHOUSES

Fla., Jacksonville.—County Commrs. let contract to erect courthouse annex, etc. (See City and County.)

Fla., Ft. Myers.—Lee County Commrs. let contract at \$88,674 to G. A. Miller, Tampa, to erect courthouse; Francis J. Kennard, Archt., Tampa. (Lately noted.)

DWELLINGS

Ala., Haleyville.—R. J. Barnett let contract to erect \$3000 residence.

D. C., Washington.—J. G. Meinberg will expend \$8000 to erect three dwellings; 20x55 ft.; ordinary construction; tin roof; hot-water heat; gas and electric lighting; C. C. Dunkle, Archt., 141 Kentucky Ave., Washington; contract (lately noted) let to Peter Fersinger, 1 N St. N. W., Washington.

D. C., Washington.—F. Becker let contract to W. Preston, 719 S St. N. W., Washington, to erect 2-story brick dwelling and stable at 1254 21st St.; cost \$3500; W. Allard, Archt., 707 G St. N. W., Washington.

D. C., Washington.—Jas. A. Craig let contract to L. D. Hayes, 4601 Dean Ave. N. E., Washington, to erect 2-story frame dwelling at 1015 Kearney St. N. E., Washington; cost \$4250; N. T. Haller, Archt., Corcoran Bldg., Washington.

D. C., Washington.—Louise Taylor let contract to Chas. H. Taylor, 3427 34th Pl. N. W., Washington, to erect 2-story frame and pebble-dash dwelling at 3540 Macomb St. N. W.; cost \$6000; R. G. Moore, Archt., 1512 H St. N. W., Washington.

D. C., Washington.—Schutz & Coan let contract to H. P. Butler to erect 2-story frame dwelling at 1501 W St. N. E.; cost \$3000; J. A. Cook, Archt., 1345 Valley Pl. S. E., Washington.

Fla., St. Petersburg.—C. J. Godsey let contract to E. A. Houser to erect dwelling; 9 rooms; 2 stories; mill construction; shingle roof; cost \$4500. (Lately noted.)

Fla., Tampa.—John Levy let contract to M. F. Lopez, Tampa, to erect residence in Suburb Beautiful; cost \$5000; Fred J. James, Archt., Tampa.

Ga., Atlanta.—Dr. E. C. Hodgson let contract to erect residence; frame; cost \$30,000; Fred J. Orr, Archt., 706 Southern Mutual Bldg., Athens, Ga.

Ga., Athens.—Wm. Hartsock Co. let contract to C. E. Miller, Atlanta, to erect two frame residences; cost \$5500.

Ga., Winder.—Dr. J. T. Wages let contract to erect residence; brick veneer; Fred J. Orr, Archt., 706 Southern Mutual Bldg., Athens, Ga.

Ky., Greensburg.—H. Shively will erect residence; let contract to G. E. Nepp, Greensburg, to construct cement block foundation.

Ky., Maysville.—H. C. Dietrich will erect residence; let contract to G. A. Boehm, Maysville, to mfr. 5000 concrete blocks to be used in construction.

Ky., Mt. Sterling.—Dr. J. Clarke, Russell, Ky., let contract to Ward Stephenson, Winchester, Ky., to erect bungalow.

La., New Orleans.—E. D. McKella has plans by and let contract to Jones & Roessle, New Orleans, to erect residence on Pine St. between Birch and Green Sts.; 1 story, basement and attic; frame; slate roof; cost \$4500.

La., New Orleans.—E. B. Ellis has plans by and let contract to E. L. and J. D. Young, 2927 St. Claude Ave., New Orleans, to erect dwelling; 36x80 ft.; ordinary construction; slate roof; hot-water heat; electric lighting; cost \$5900. (Lately noted.)

Md., Mt. Washington.—Mrs. Beverly Matthews let contract to Webb & White, Title Bldg., Baltimore, to erect residence on North Ave., Hill Top Park; completion by Jan. 1; cost about \$5000; O. B. Wight, Archt., Munsey Bldg., Baltimore.

Md., Roland Park.—Dr. Donald Hooker let contract to Roland Park Co., Roland Park, and Munsey Bldg., Baltimore, to erect residence at Belvedere Ave. and Falls Rd.; 2½ stories; stone; Edw. L. Palmer, Jr., Archt., 406 Roland Ave., Roland Park. (Lately noted.)

Mo., St. Louis.—A. Deldeshimer let contract to Armbruster & Co., St. Louis, to erect 2-story dwelling at 4018 Magnolia St.; cost \$5500.

Mo., St. Louis.—Mary Pickhardt let contract to J. C. Mueller, St. Louis, to erect 2-story dwelling at 4476 Margaretta St.; cost \$3200.

Mo., St. Louis.—Mrs. M. V. Feldman, Mt. Olive, let contract to W. P. Robertson, Clayton, Mo., to erect stucco and brick dwelling at Meridian; cost \$3000.

Mo., University, Sta. St. Louis.—F. E. Ringenberg let contract to Fred Schramm, 3553 Russell St., to erect brick dwelling on Maryland Terrace; 40x27 ft.; cost \$4900.

N. C., Ansonville.—L. L. Little let contract to O. C. Downman, Wadesboro, N. C., to remodel and erect addition to dwelling; slate roof, 75 squares; columns 26 in. at base, 21 in. neck and 20 ft. 10 in. over all; cost \$4500; Robt. Eisenschmidt, Archt., Charlotte, N. C.

N. C., Charlotte.—O. B. Robinson is erecting dwelling; cost \$10,000; contract let to Carolina Realty Co., Charlotte; all sub-contracts let.

N. C., Charlotte.—S. H. Long let contract to Carolina Realty Co., Charlotte, to erect dwelling; frame; cost \$4500. (Lately noted.)

N. C., Newbern.—Stallings Bros., Newbern, have contract to install plumbing in buildings of Dr. E. S. Sloan, for which Rhodes & Underwood, Newbern, have general contract; brick, slate and steel; wood joists and floors; concrete roof slab; main building 50x120 ft.; reported to cost \$40,000; R. F. Smallwood, Archt., 557 5th Ave., New York. (Noted in June.)

S. C., Florence.—Isaac Sulzbacher let all contracts to erect dwelling; 2 stories; red cypress shingle roof; cost \$4000; W. D. Harper, Archt., Florence. (Lately noted.)

S. C., Florence.—M. S. Haynesworth let contract to erect residence to replace burned structure.

S. C., Greenville.—Dr. W. M. Burnett will erect 5-room dwelling on Park Ave.; 1-story; 45x45 ft.; ordinary construction; cedar shingle roof; electric lighting; cost \$3800; steam heat, \$380; H. O. Jones, Archt., Greenville; contract let to E. J. Gilson, Greenville.

Tenn., Nashville.—Dr. I. S. Wampler has plans by and let contract to Mr. McEaddy to erect residence on Compton Ave.; 35x43 ft.; brick veneer; asphalt roofing; hot-air furnace to cost about \$250; cost \$4000. (Lately noted.)

Tex., Beaumont.—Ed Paggi let contract to O. C. Herrinkind, Beaumont, to erect rooming-house; cost \$12,000; Mauer, Knoblock & Simank, Archts., Gordon Bldg., Beaumont. (Lately noted.)

Va., Lynchburg.—Chas. G. Craddock let contract to Hamilton Bros., Lynchburg, to erect residence; rubblestone and stucco; slate roof; hardwood floors; cost \$10,000; G. P. Craighill, Archt., Lynchburg.

Va., Roanoke.—Mrs. Janie Cox and Miss Louise Moseley let contract M. L. Peters, Roanoke, to erect veneer residence at Luck Ave. and W. Park St.; cost about \$3500; let contract to J. E. Howell, Roanoke, for heating and plumbing.

GOVERNMENT AND STATE

Okla., Oklahoma City.—Capitol.—State Capitol Com. let following contracts for erection of State Capitol: Lumber, about 318,000 ft. B. M., and 5000 bbls. cement, Minnetonka Lumber Co.; sand, 3100 cu. yds., E. A. Barnes, all of Oklahoma City; crushed stone, 6200 yds., State Reformatory, Granite, Okla.; 5000 bbls. cement to O. K. Portland Cement Co., Ada, Okla. (Lately reported letting contract for 275 tons steel bar to Capital Steel & Iron Co., Oklahoma City.)

Va., Wytheville.—Postoffice.—Treasury Department, Oscar Wenderoth, Supvr. Archt.,

Washington, D. C., let contract at \$51,273 to W. H. Fissell & Co., 1133 Broadway, New York, to erect postoffice; 2 stories and basement; brick facing; tin and composition roof. (Lately noted.)

HOTELS

Fla., Sarasota.—H. L. Higley opens bids about Oct. 5 to erect hotel and restaurant; 35x60 ft., with wing 30x60 ft.; frame; probably slag roof; H. N. Hall, Archt., Sarasota; let contract for foundation to Burns & McAlpine, Sarasota. (Lately noted.)

Ky., Louisville.—Pythian Mutual Industrial Assn. let contract to Falls City Construction Co., Louisville, to erect hotel and lodge building. (See Association and Fraternal.)

Mo., St. Louis.—Beers Hotel Co. let contract to L. H. Grone, St. Louis, to alter store and hotel at 3609 Olive St.; cost \$3000.

N. C., Weaverville.—Grand View Hotel Co., organized by J. J. Reagan, Dr. C. P. West, Dr. J. N. Gill and others to erect hotel and cottages on Hamburg Mountain at cost of about \$25,000; frame hotel, 2 stories; main building, 60x240 ft.; 2 other buildings, 35x60 ft., 1½ stories; 6 cottages, 12x16 ft., 1 story; ordinary construction; composition roof; no heating plant; electric lighting; Wm. J. East, Archt., Asheville, N. C.; contract let to C. M. Seckner, Chicago; no subcontract; automobile highway from base of mountain to hotel; purchased spring 2 ml. from hotel site and will construct gravity pipe line; Henry L. Langel, Mgr. of Swannanoa-Berkeley Hotel, Asheville, N. C., will be manager.

Okla., Blackwell.—Wm. Scherr has plans by and let contract to W. L. McAtee, Blackwell, to rebuild Savoy Hotel.

Tex., Eagle Pass.—Eagle Pass Hotel Com. will expend \$62,000 (cost without mechanical equipment) to erect hotel; 110x88 ft.; ordinary construction; tin roof; low-pressure steam heat to cost \$3300; electric light, \$1000 without fixtures; B. Stanley Brown, Archt., Eagle Pass; general contract let (in June) to L. F. Seed, Eagle Pass; heating and plumbing contract (lately noted) let to Watkins & Fulwider, Eagle Pass; wiring contract not let. (See Machinery Wanted.)

Va., Roanoke.—R. H. Angell let contract at \$29,939 to Herrington & Normoyle, Roanoke, to erect hotel at Luck Ave. and Commerce St.; 3 stories; brick; 55x50 ft.; mill construction; Carey's roof; heating plant to cost \$2500; H. M. Miller, Archt., Roanoke.

MISCELLANEOUS

Fla., Deland.—Skating Rink, etc.—Blue Lake Park Co. (W. H. Schooley and others) has plans by and let contract to Chas. Wood, Deland, to erect skating rink and refreshment pavilion; 75x75 ft. and 40x40 ft., respectively; peroid roof; electric lighting; cost \$3000. (Lately noted.)

La., Lake Charles.—Orphanage.—Louisiana Baptist Orphanage let contract to Knapp & East, Lake Charles, for improvements to cost about \$15,000, and include electric lights, steam heat, etc.

Okla., Chickasha.—Hospital.—Chickasha Hospital (Drs. Livermore and Downey) employed J. B. Barnes as foreman to superintend remodeling building into hospital; 16x39 ft.; ordinary mill construction; gravel roof; cost \$12,000; low-pressure steam heat to cost \$2000 let to Bock Plumbing Co., Chickasha; electric wiring, etc., to Chickasha Electric Co. (Lately noted.)

Va., Portsmouth.—Stable.—B. J. Mahoney let contract to R. K. Revell, Portsmouth, to erect 1-story galvanized-iron stable on King St.; also to repair burned building on Middle St.; cost \$3731.

W. Va., Huntington.—Clubhouse.—Ohio Valley Electric Ry. Employees' Welfare Assn. let contract to C. W. McNulty, 824 Washington St., Huntington, to erect clubhouse at Washington Ave. and 19th St.; 2 stories; cost \$5000.

RAILWAY STATIONS, SHEDS, ETC.

Ga., Hawkinsville.—Southern Ry., B. Herman, Ch. Engr., 1300 Pennsylvania Ave., Washington, D. C., let contract to R. V. Labarre, Birmingham, to erect frame passenger station; 31x88 ft.; tile roof; present combination depot will be remodeled as freight depot.

SCHOOLS

Ala., Mobile.—Moncrief Furnace Co., Atlanta, has contract at \$17,247 to install fan-blast system of heating and ventilating in Barton Academy and three other public schools for which general contract was let to Hancock, Harbin & Hancock, Mobile; Stevens

& Nelson, Architects, New Orleans. (Lately noted.)

Ark., Clarksville.—School Board will expend \$20,000 to erect high school; 87x124 ft.; steam heat; J. T. W. Ginnings, Archt.; contract (lately noted) let to Arkansas-Indiana Lumber Co., Clarksville.

Fla., West Tampa.—School Trustees let contract to Logan Bros., Tampa, to erect addition to A. L. Cuesta School and building for Ellinger City, West Tampa; former, 2 stories and basement; 50x80 ft.; ordinary construction; Cartwright metal shingle roof; cost \$14,600; latter, 2 stories and basement; ordinary construction; Barrett's specification tar and gravel roof; cost \$13,337; Jno. W. Biggar, Archt., West Tampa. (Lately noted.)

Ga., Atlanta.—Georgia Training School for Girls let contract to Kalb & McCauley, Atlanta, to erect proposed building on Baker's Ferry Rd.; 2 stories and basement; brick veneer; 160x26 ft.; stone foundation; steam heat; screened porches; acetylene lighting plant; septic disposal plant; A. Ten Eyck Brown, Archt., Forsyth Bldg., Atlanta; cost \$16,500.

Ky., Louisville.—American Mosaic & Tile Co., 309 E. Broadway, Louisville, has contract for terrazzo work, and Petersburgh Co., 809 S. 13th St., Louisville, for marble work on high school, for which Bailey & Koerner, 511 Walker Bldg., Louisville, have general contract; J. Earl Henry, Archt., Louisville; other subcontracts are as follows: J. Hoadley & Sons Co., Stinesville, Ind., stone; Pyne Co., steel and iron; P. H. Meyer Co., plumbing; Neal Electric Co., electrical work; J. F. McKelvey, painting; Frey Planing Mill Co., mill work; all of Louisville; Corrugated Bar Co., Buffalo, N. Y.; cost of building (without mechanical equipment) \$220,000. (Previously noted.)

Mo., St. Louis.—Board of Education let contract to Murch Bros. Construction Co., Odd Fellows' Bldg., St. Louis, to erect Bryan-Mullanphy School at Klemm and Shaw Aves.; 261x147 ft.; 2 stories and basement; fireproof; slate roof; cost \$173,990; down-draft boilers with air-washer system to cost \$31,944; contract let to Behr Electric Co., Frisco Bldg., St. Louis, at \$4667 for electric lighting; Wm. B. Ittner, Archt., Board of Education Bldg., St. Louis. (Lately noted.)

Mo., Webster Groves.—M. Eyssell Construction Co., 320 Odd Fellows Bldg., St. Louis, has contract to erect public school; 50x110 ft.; cost \$22,000; M. P. McArdle, Archt., St. Louis.

N. C., Lillington.—School Trustees, J. E. Coviness, Chmn., let contract (in June) to M. A. Moser, Raleigh, N. C., to erect graded school with dormitories; brick; slate roof; air or steam heat; character of lighting not determined; cost \$25,000; C. E. Hartge, Archt., Raleigh, N. C.; J. M. Shaw, sub-contractor, Lillington.

N. C., Manteo.—Dare county let contract to W. P. Gray, Manteo, to erect high school; 60x70 ft.; 2 stories; cypress and galvanized-iron shingle roof; cost \$5000. (Previously noted.)

Okla., Lambert.—School Trustees let contract to Reynolds & Thompson, Geary, Okla., to erect fireproof school; 48x67 ft.; 2 stories and basement; pitch and gravel roof; steam heat; cost \$12,000; J. O. Parr, Archt., Oklahoma City. (Lately noted.)

S. C., Charleston.—North Chester Development Co. let contract to erect school; cost \$3000; Fred J. Orr, Archt., 706 National Mutual Bldg., Athens, Ga.

Tex., Lyons.—Trustees of Public School Dist. No. 13, Burleson county, let contract to Carl Kaub, Mexia, Tex., to erect school; brick walls; ordinary construction; asbestos composition roof; jacketed ventilating heaters; cost \$8500; Dennis R. Walsh, Archt., Littlefield Bldg., Austin. (Lately noted.)

Tex., San Antonio.—School Board let contract to Arend & Vogel, San Antonio, at \$64,775 to erect manual training high school; 90x153 ft.; fireproof; Barrett's composition 5-ply roof; heating plant (contract not let) to cost \$8000; Leo M. J. Diekmann, Archt., San Antonio. (Lately noted.)

Va., Kempville, R. F. D. from Norfolk.—Princess Anne county let contract to C. Goffigon & Co., Norfolk, to erect addition to school; 30x65 ft.; ordinary construction; slate roof; stoves; cost \$3444. (Lately noted.)

Va., Lexington.—Washington and Lee University is reported to have let contract to John Thatcher & Co., Brooklyn, N. Y., to erect gymnasium; 65x130 ft.; 2 wings, each 40x80 ft.; 2 stories; Flournoy & Flournoy, Architects, 701 Wilkins Bldg., Washington, D. C.; cost about \$100,000. (Lately noted.)

W. Va., Princeton.—East River Dist. of

Mercer county will expend \$8500 to erect 7 schools; about 24x34 ft.; ordinary construction; metal roof; hot-air heat; electric lighting; A. F. Wyssong, Archt., Princeton; let contracts as follows: C. M. Lilly, C. E. Murdock, Linder & Griffith, J. A. Hillsel, to erect one each, and L. E. Miller & Co. for 3 buildings; all of Princeton. (Lately noted.)

STORES

Fla., West Palm Beach.—A. B. Dawkins let contract to Guy E. Whitting, West Palm Beach, to erect business building; 2 stories; 40x50 ft.; concrete blocks; composition roof; wood floors; cost \$35,000. (Lately noted.)

Ga., Dalton.—J. F. Robertson has plans by and let contract to J. L. Wallace, Dalton, to erect store building on W. Gordon St.; one story; 25x110 ft.; fireproof; brick; plate-glass front; galvanized iron roofing; stoves; electric lights; concrete sidewalk; cost \$3500; construction to begin Oct. 1. (Lately noted.)

Md., Baltimore.—Bernheimer Bros. let contract to Milton C. Davis, 15 E. Fayette St., Baltimore, for improvements to building at 118 N. Howard St.; construct stairway, change location of elevator, construct plate glass and copper front, etc.; cost about \$14,000; Otto G. Simonson, Archt., Maryland Casualty Tower Bldg., Baltimore.

Mo., St. Louis.—Colfax Real Estate Co. let contract to erect store and apartment building. (See Apartment-houses.)

Mo., St. Louis.—Beers Hotel Co. let contract to alter store and hotel. (See Hotels.)

Mo., St. Louis.—E. & H. Freund let contract to Theo. Ratz, St. Louis, to erect addition to store, 1550-52 S. Broadway; cost \$3000.

Mo., St. Louis.—A. C. Miller Grocery Co. let contract to S. S. Pomery, St. Louis, to erect 2-story brick building at 5947-53 Kingsbury St.; cost \$15,000.

N. C., Crouse.—School Trustees let contract to erect school; 4 rooms, auditorium; cost \$2800.

Okla., Cushing.—Gus Howerton let contract to P. F. Gross, Cushing, to erect store and office building on N. Harrison St.; 50x100 ft.; mill construction; tar and gravel roof; cost \$16,000; steam heat, about \$1000; electric lights, about \$300. (Lately noted.)

Okla., Hugo.—T. A. Minor let contract to G. W. Dodd, Hugo, to erect business building; 56x140 ft.; ordinary construction; gravel roof; electric lighting; cost \$7000. (Lately noted.)

Tex., Beaumont.—H. A. Perlstein let contract to Herman Weber to erect store and apartment building; 120x110 ft.; 2 stories; ordinary construction; composition roof; cost \$25,000; Mauer, Knoblock & Simank, Architects, Beaumont. (Lately noted.)

Tex., Dallas.—Mrs. Sallie A. Gibbs (Hann & Kendall, Agts.) has plans by and let contract to Watson Co., Dallas, to wreck and remodel about 40 store fronts (1000 ft.) in connection with widening Elm and St. Paul Sts.; total cost, including moving car tracks, building, etc., about \$300,000. (Lately noted.)

W. Va., Matoaka.—Pythian Building Assn., A. Buchanan, Secy., let contract to erect store and lodge building. (See Association and Fraternal.)

W. Va., Parkersburg.—Martin-Nelly Co. let contract to R. L. Brown, Parkersburg, to erect grocery store; 3 stories and basement; 122x154 ft.; mill construction; built-up Barrett's specification roof; cost \$50,000; T. T. Sansbury, Archt., Parkersburg; material contracts let. (Previously noted.)

THEATERS

Md., Hagerstown.—Potomac Real Estate Co. let contract to Geo. B. McC. Wolf, Hagerstown, to erect Maryland Theater; 4 stories; seating capacity 2200; steel and imported brick; 78x150 ft.; combination construction; slag roof; cost (without mechanical equipment) \$80,000; Thos. W. Lamb, 210 W. Lexington St., Baltimore, and Harry E. Yesler, Hagerstown, Architects. (Previously noted.)

S. C., Anderson.—Anderson Machine & Foundry Co., Anderson, has contract at \$500 for steel work in Anderson Theater and office building for Anderson Development Co., for which Roney & Atkinson, Anderson, have general contract; plans by Chas. K. Bryant, Richmond, Va., call for structure 82x204 ft.; fireproof; slag roof; steam heat; electric lighting; prism sidewalk lights; cost \$40,000. (Lately noted.)

WAREHOUSES

Fla., Fort Myers.—H. E. Heitman let contract to E. Strickland to erect warehouse for hay and grains; 50x80 ft.; wood framing; galvanized iron sheathing and roof; cost \$1200. (Lately reported burned.)

Ga., Columbus.—Meritas Mills, 320 Broadway, will expend \$60,000 to erect warehouse; 100x160 ft.; 6 stories; mill construction; general roofing; contract (lately noted) let to T. C. Thompson & Bro., Charlotte, N. C., and Birmingham.

Ga., Ocilla.—Planters' Warehouse Co. let contract to Benj. Fussell, Ocilla, to erect addition to warehouse.

N. C., Charlotte.—Fiske-Carter Construction Co., Greenville, S. C., general contractor to erect warehouse for Alexander Sprunt & Sons, let following subcontracts: Bricks, Charlotte (N. C.) Brick Co.; lumber, Carolina Lumber Co., Charlotte; roofing and metal work, G. G. Ray & Co., Charlotte; cement, Dixie Portland Cement Co., Chattanooga, Tenn. (Previously noted to cost \$25,000.)

Okla., Eufaula.—Eufaula Warehouse Association let contracts to erect cotton warehouse; 60x200 ft. and 60x100 ft.; galvanized iron; cost \$2500. (Lately noted inceptd., \$5000 capital.)

Okla., Maysville.—Maysville Warehouse

Co., E. V. Keeney, Prest., has plans by and let contract to J. M. Jaye to erect cotton warehouse; 50x150 ft.; galvanized iron; cost \$3000. (Lately noted inceptd., \$3000 capital.)

S. C., Camden.—F. M. Wooten let contract to Mitcham & Stokes, Camden, to erect cotton warehouse for Camden Cotton Storage Co.; 66x96 ft.; standard construction; metal roof; R. W. Mitcham, Archt., Camden. (Camden Cotton Storage Co. lately noted inceptd., \$5000 capital.)

Tex., Wichita Falls.—Wichita Falls Cotton Warehouse is reported to have let contract at \$1200 to Chas. M. Bialowski, Jr., Wichita Falls, for first unit of series of warehouses; 120x120 ft.; sheet iron; capacity, 1000 bales. (Lately noted.)

Va., Norfolk.—Security Storage & Safe Deposit Co. will expend \$40,000 to erect warehouse; 54x116 ft.; fireproof reinforced concrete construction; brick; vacuum cleaner; this building first of several units to be erected as required; Neff & Thompson, Architects, Norfolk; contract (lately noted) let to Richardson Construction Co., Norfolk.

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Birmingham.—Contract for 11 mi. of second track on the Alabama Great Southern R. R. between Birmingham and Mobile Junction is awarded to M. M. Elkan of Baltimore, according to announcement.

Ala., Florence.—Florence & Huntsville Interurban Ry. Co. will build about 75 mi., it appears, from Florence eastward to Huntsville. Ala., besides about 12 mi. of spur tracks. There is also a branch projected from Killen via Lexington to Pulaski, Tenn. Surveys will begin immediately. M. S. Bingham is Chief Engr. and Thurston H. Allen, Prest., both at Florence.

Ala., Gadsden.—Preliminary steps are being taken for the construction of the proposed electric interurban railway from Gadsden to Center, 20 mi., and a survey is to be made. Estimated cost of construction \$250,000, including equipment. Earl Lay, Secy. Gadsden Chamber of Commerce, may give information.

Ark., Pine Bluff.—The Pine Bluff Chamber of Commerce is reported negotiating with the Ashley, Drew & Northern Ry. Co., of which R. O. Roy is Prest. at Crossett, Ark., to secure an extension to Pine Bluff. E. B. Bloom, Secy. of the Chamber of Commerce, may give information.

Ga., Lula.—Lula-Homer R. R. Co. has applied for charter to build a line from Lula to Homer, about 15 mi. Capital stock \$200,000. Headquarters at Lula. D. G. Zeigler is chief engineer. Petitioners are S. A. Carter, W. A. Boling, B. E. Chapman, Joel Coffee and E. F. Whitworth of Lula, and J. N. Hill, L. F. Turk, R. C. Alexander, C. H. Chambers and E. A. Mize of Homer. Already 75 per cent. of the grade is done.

Ky., Whitesburg.—Louisville & Nashville R. R., according to a local report, will begin work soon on a 3 mi. extension from Haymond to Jenkins, Ky., which will include a short tunnel, and make connection with the Baltimore & Ohio line from there to Shelby. H. C. Williams is Ch. Engr. of Constr. at Louisville, Ky.

Md., Baltimore.—The Philadelphia, Baltimore & Washington R. R. Co. says it is not contemplated at present to revise line south of its tunnel at Baltimore, this being with reference to a recent press report. J. C. Auten, Wilmington, Del., is Pr. Asst. Engr.

N. C., Greensboro.—The Morrow Construction Co. of Atlanta, which has a double-tracking contract on the Southern Ry., has established local offices in the Southern Life & Trust Bldg. at Greensboro.

N. C., Lillington.—Central Carolina R. R. Co., which proposes to build from Lillington to Swansboro, N. C., about 125 mi., via Bule's Creek, Benson, Mount Olive, Richlands and Jacksonville, has not yet named date for construction and equipment bids, but W. J. Edwards of Sanford, N. C., Prest., is quoted saying that construction will begin as soon as financing is arranged, and preliminary work will probably begin by Nov. 1. Other officers and directors are H. P. Edwards, V. P. and Treas., and J. R. Baggett of Lillington, Counsel. J. W. Cunningham is Secy.

N. C., Warsaw.—Atlantic & Carolina R. R. has completed its line from Warsaw to Kenansville, 10 mi., and will soon, it is expected, be ready for operation.

Okla., Doby Springs.—The Rosston, Grand Rapids & Protection R. R. Co., of which L. A. Walton of Alva is Prest., represents an effort of farmers to obtain a railroad to serve

the region between Doby Springs and the Wichita Falls & Northwestern Ry., 12 mi. Charter not yet secured.

Okla., Jennings.—Oil Belt Terminal Railway Co. of Jennings is chartered; capital \$10,000. Incorporators: Jos. L. Hall of Cincinnati, O.; W. A. Ledbetter of Oklahoma City and W. N. Patterson of Muskogee, Okla.

S. C., Estill.—Savannah Western R. R. Co. has been granted a commission to build a railroad from Estill to St. Paul, about 20 mi. Capital \$100,000 to \$1,000,000. Stock subscription books will be opened Sept. 28 at Columbia, S. C., in the National Loan and Exchange Bank Bldg., E. L. Craig, Atty. Survey begins at Branchville, S. C. Incorporators include G. H. Milligan of Charleston, S. C., and Virgil Walker and Adrian M. Rea of Newbern, N. C.

S. C., Greenville.—Greenville & Western Ry. Co. is commissioned to succeed the Greenville & Knoxville Ry. Co., whose plan to build through the mountains to Brevard, N. C., and to a connection for Knoxville, Tenn., is expected to be finally fulfilled; directors, Thos. Eggleston, A. P. Coles and Asa G. Candler, all of Atlanta, Ga.; R. E. McTiere of Bainbridge, Ga., and John McCord of Atlanta; capital \$50,000. J. R. Cothran is Ch. Engr. at Greenville.

Tenn., Morristown.—Surveys are reported in progress for improvements to the Knoxville & Bristol R. R. (Southern Ry. system) east and west of Morristown. Henry Fonde, Gen. Agt. Southern Ry. at Knoxville, Tenn., may give information.

Tex., Ballinger.—Young Men's Business League is reported interested in plans for the construction of a railroad from Lamesa southeast via Ballinger to Austin, Tex., about 300 mi., and beyond. James L. Himrod of New Orleans, La., submits the proposition, and says that survey is in progress from Austin northwest via Fredericksburg, Mason, Brady, Ballinger and Robert Lee to Lamesa, the line to be called Texas, New Mexico and Eastern.

Tex., Big Spring.—Big Spring Commercial Club is reported to have contracted to pay a bonus of \$30,000 to M. J. Healy when a railroad is built from Big Spring to Lamesa via Soath, about 100 mi.

Tex., Lubbock.—Altus, Lubbock & Roswell Ry. Co. will, it is announced, complete line from Lubbock to Memphis, Tex., 86 mi., on which grade is done, this fall. Extensions proposed: West to Roswell, N. M., and east to Altus, Okla. J. M. West, E. C. Noble and Carey Shaw of Houston, Tex., and O. L. Slayden and F. E. Wheeler of Lubbock are interested. (See Manufacturers Record, July 2.)

W. Va., Owensport.—West Virginia Electric R. R. Co., according to a local report, is in process of organization to build an electric railway about 50 mi. long from Owensport to Weston, W. Va.

Thor Pneumatic Tools.

Circular "V," recently issued by the Independent Pneumatic Tool Co., Thor Bldg., Chicago, Ill., contains specification tables for air drills and pneumatic hammers and illustrations and description of Thor roller-bearing piston air drills, pneumatic shipping, calking and flue-bending hammers; turbine drills, staybolt drivers, air hose, couplings, etc. The company also manufactures Thor electric drills of all kinds, which are described in circular "E-1." Circulars and catalogues of the company's products will be furnished to interested persons upon request.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Aluminum Kitchen-ware.—T. H. Weaver, 1301 Peachtree St., Atlanta, Ga.—Addresses of manufacturers of aluminum kitchen-ware.

Angles and Plates (Steel).—Navy Dept., Bureau of Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Oct. 13 to furnish steel angles and plates, schedule 7346; delivery Charleston, S. C.; for schedules apply to navy pay office nearest navy-yard.

Automobile Supplies.—See Machine Shop Equipment, etc., O. W. Kerner.

Bags (Paper).—See Paper and Paper Bags, etc., National Closet Co.

Bagging (Cotton).—Floyd & Hill Co., Chipley, Ga.—Data and prices on cotton bagging for covering cotton.

Bed Spring Machinery, etc.—Dellinger Bros., Cherryville, N. C.—Data and prices on machinery and supplies for manufacturing bed springs.

Belt Machinery.—Geo. J. Nagel, 2807 Brown Ave., Birmingham, Ala.—Prices on new or second-hand belt machinery.

Blacksmith Tools.—See Machine Shop Equipment.

Boiler.—Cannon Ball Towel Supply Co., 2009 Orange St., Dallas, Tex.—Boiler of 100 or 150 H. P. capacity.

Boilers.—Chas. J. Geohagan, 1428 N. 20th St., Birmingham, Ala.—Prices on 60 to 150 H. P. boilers, good for pressure 120 to 150 lbs.; state what fittings are with each boiler and condition of each.

Bricks (Acid-proof).—W. Lawson, sales manager, Power Gas Corporation, Ltd., Stockton-on-Tees, England.—Addresses of American manufacturers of acid-resisting bricks for use on floors and wall facings of building where sulphuric acid will be used.

Brick.—See Building Materials.

Bridge Construction.—See Road Construction, etc.

Bridge Construction.—Dept. of Public Finances, Accounting Division, New Orleans, La.—Bids until Oct. 26 to construct Strauss trunnion bascule lift bridge over New Basin Canal on axis of City Park Ave.; plans and specifications on file with City Engr., who will furnish blank proposal forms. A. G. Hicks, Commr.

Bridge Construction.—Floyd County Board, J. G. Pollock, Chrmn., Rome, Ga.—Bids until Oct. 19 to construct concrete bridge over Armuchee Creek on Summer-ville Rd.; for information address Kieffer Lindsey, County Engr.

Bridge Construction.—Lee County Supvrs., B. F. Parker, Prest., Tupelo, Miss. Let contract Oct. 5 to construct about 14 bridges, lengthen bridge in Garrett Creek Bottom and Aberdeen and Ripley Rds., and construct levee on Factory Branch Bottom on Baldwin and Marietta Rds.

Bridge Construction.—Committee on Public Works, Board of Bond Trustees, Geo. M. Powell, Chrmn., Jacksonville, Fla.—Bids until Oct. 6 to construct reinforced concrete bridge over Hogans Creek on Main St.; specifications on file with Commr. of Public Works; proposal forms, plans and specifications obtainable from Chief Clerk, Engr. Dept., Main and Orange Sts.

Bridge Construction.—F. R. Booth, Ordinary of Oconee County, Watkinsville, Ga.—Bids until Oct. 12 to furnish steel for following: Malcolm bridge, 5 beam spans at 21 ft., 1 beam span at 36 ft., 1 bent at 6 ft. and 2 bents at 7 ft. 6 in.; Burt Factory bridge, 2 spans at 16 ft., 1 span at 20 ft., 1 bent at 7 ft. 6 in., 1 bent at 6 ft., 1 truss span at 60 ft.; Daniel bridge, 6 spans at 16 ft., 1 span at 20 ft., 1 span at 35 ft. 6 in., 3 bents at 7 ft., 2 bents at 9 ft.; steel to be delivered f. o. b. Watkinsville, ready for erection, together with bolts, washers, etc.; plans and specifications on file with Good Roads Dept. of University of Georgia (Searcy B. Slack, Engr.), Athens; copies obtainable for \$2.

Buckets (Clam-Shell Coaling).—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washing-

ton, D. C.—Bids Oct. 13 to furnish 12 clam-shell coaling buckets, schedule 7376; delivery Norfolk; for schedules apply to navy pay office nearest navy-yard.

Building Materials.—Baptist Church, Rev. W. J. Barton, pastor, Cornelia, Ga.—Prices on common and face brick, truss bolts, 1 beam, 8-in. standard rods for concrete work.

Building Materials, etc.—John Thatcher & Son, 60 Park Ave., Brooklyn, N. Y.—Bids before Oct. 5 on all sub-contract items for erection of \$60,000 gymnasium at Lexington, Va.

Cable.—Engr. Dept., U. S. Army, Washington Barracks, D. C.—Bids until Oct. 2 to furnish under specification No. 95 rubber-insulated lead-covered cable as follows: 350 ft. 2-conductor, 106,000 cir. mils.; 900 ft. 41,700

cir. mils., and 2500 ft. 26,300 cir. mils. For further information address Jos. E. Kuhn, Lieut.-Col., Engrs.

Cans.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 13 to furnish 4000 one-gal. paint cans, schedule 7381; delivery Norfolk; for schedules apply to navy pay office nearest navy-yard.

Carpet.—Bethesda Presbyterian Church, Rev. H. L. Cathey, pastor, Lynchburg, Va.—Prices on carpet for \$4375 church building.

Cells (Jail, Steel).—Fred Schwoon, Jr., County Engr., Tracy City, Tenn.—Addresses of manufacturers of steel jail cells.

Concrete Retaining Wall.—Phil Lacey, Commr. Public Works, Bradentown, Fla.—Bids until Oct. 12 for 700 lin. ft. reinforced concrete retaining wall containing about 326 cu. yds., filling in behind walls about 700 cu. yds., furnishing and driving 87 piles and furnishing and placing 1400 lin. ft. hand rail.

Crane.—H. W. Dexter, Box 1417, Jacksonville, Fla.—Overhead shop crane, power or electric; 5 to 10 tons capacity.

Crane, Boiler, etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Oct. 27 to furnish jib crane, water-tube boiler and turntable, schedule 7371; for schedules apply to navy pay office nearest navy-yard.

Crane (Electric).—L. B. Skinner Mfg. Co., Dunedin, Fla.—Will install single 1 beam electric traveling crane of one-ton capacity.

Crushing Machinery.—A. I. Pettit, Mt. Sterling, Iowa.—Addresses of manufacturers of machinery to produce ground lime rock for fertilizer.

Drainage Construction.—Supvrs. Elsberry Drainage Dist., Jas. C. Welch, Secy., Elsberry, Mo.—Bids until Oct. 24 to install steam-driven pumping plant complete, containing two 48-in. centrifugal pumps, each to have normal capacity of 59,000 gals. per minute and maximum capacity of 74,000 gals. per minute against maximum static head of 14 ft.; also receives bids at same time to construct reinforced concrete sluiceway; for further information address Harman Engineering Co., Peoria, Ill.

Dredge (Dipper).—Siddell Drainage Dist., A. C. Noble, Secy.—Machinery for 1½ yd. dipper dredge; will consider second-hand, good condition.

Drills.—See Machine Tools.

Electric-lighting Equipment, etc.—Treasury Dept., office O. Wenderoth, Supervising Archt., Washington, D. C.—Bids until Oct. 22 for conduit and wiring system and lighting fixtures at U. S. Appraiser's warehouse, New York; copies of drawings and specifications obtainable at Archt.'s office, or office of Supervising Chief Engr., U. S. Customhouse, New York, at discretion.

Electrical Equipment.—S. P. Poyner, Dothan, Ala.—Prices on electrical equipment for \$6000 dwelling.

Electrical Fittings and Hardware.—

Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 13 to furnish miscellaneous lot electrical fittings and hardware, schedule 7347; delivery Annapolis; for schedules apply navy pay office nearest navy-yard.

Electrical Machinery.—Empresa "American Styles" S. A., Pl Y Margall, 20, Valencia, Spain.—Correspondence (view to agency) with manufacturers of electrical apparatus and supplies.

Electrical Machinery.—Electrical Supply Co., 326 Camp St., New Orleans, La.—Following, second-hand: 10 H. P. A. C. 220 or 440-volt, 60-cycle 3-phase motor; 15 H. P. A. C. 220 or 440-volt, 60-cycle 3-phase motor; 7½ H. P. A. C. 220 or 440-volt, 60-cycle 3-phase motor; 20 H. P. A. C. 220 or 440-volt, 60-cycle 3-phase motor.

Electrical Machinery.—City of Jacksonville, Fla.—Will want prices on 5000 K. W., 6000-volt, 60-cycle turbo-generator with auxiliaries; W. H. Tucker, Supt. Electrical Dept.

Electric Motor.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until Oct. 6 to furnish at Naval Academy, Annapolis, Md., 25 H. P. direct-current motor; applications for proposal to refer to schedule 7312; blank proposals furnished on application to Navy Pay Office, Baltimore, or to Bureau; Saml. McGowan, Paymaster-Gen., U. S. N.

Electrical Supplies, etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.

Bids Oct. 20 to furnish at Mare Island, Cal., naval supplies as follows: Electrical supplies, schedule 7280; oil coolers, schedule 7350; North Carolina pine pitch, schedule 7353; billet steel, schedule 7354; raw and boiled linseed oil, schedule 7356.

Elevator.—B. Stanley Brown, Eagle Pass, Tex.—Prices on electric elevator for \$62,000 hotel.

Engine.—Cannon Ball Towel Supply Co., 2009 Orange St., Dallas, Tex.—High-speed engine of 25 to 35 H. P.

Engines (Hoisting).—Chas. J. Geohagan, 1428 N. 20th St., Birmingham, Ala.—Prices on 8x10-in. and 10x12-in. hoisting engines, double cylinder, single drums; give maker's name, length of time used and present condition.

Filtration Plant.—Directors, Central State Hospital, W. F. Drewry, Supt., Petersburg, Va.—Bids until Oct. 13 to build water filtration plant, complete, except as noted in specifications; contour plan of proposed site and preliminary plan of proposed plant may be seen, and specifications and proposal forms obtained from Robt. D. Budd, Consulting Engr., Petersburg, for \$5.

Fire-Alarm System.—City of Shreveport, La., L. H. Baker, Secy.-Treas.—Bids until Oct. 6 for material and equipment to be used in extension of underground fire alarm system; terms and specifications on file with chief of Fire Dept.

Fountain.—S. P. Poyner, Dothan, Ala.—Prices on fountain for conservatory.

Furniture (Pulpit).—Bethesda Presbyterian Church, Rev. H. L. Cathey, pastor, Lynchburg, Va.—Prices on pulpit furniture.

Furnishings (House).—John Bing, 381 4th Ave., New York.—Correspondence (view to agency in Australia and New Zealand) with American manufacturers of house furnishings and kitchen-ware.

Gauges (Steam Pressure).—Navy Department, Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 27 to furnish 2 brass steam-pressure gauges, schedule 7370; delivery Puget Sound; for schedules apply to navy pay office nearest navy-yard.

Grading.—Warren County Supvrs., Vicksburg, Miss.—Bids until Oct. 6 to grade hill on road on Bryson Pl. in 4th Dist.; plans and specifications on file with J. D. Laughlin, Clerk.

Grading.—Baltimore (Md.) Board of Awards, care City Register, City Hall.—Bids until Oct. 7 to grade west footway of Reisterstown Rd. from Liberty Heights Ave. to about Old Tollgate, about 1200 sq. yds.; specifications and proposal sheets furnished on application Dept. Public Improvements, sub-department of H. K. McCay, City Engr.

Hardware.—S. P. Poyner, Dothan, Ala.—Prices on hardware for \$6000 dwelling.

Hardwood, etc.—R. S. Spiers, Pineora, Ga.—Addresses of manufacturers of this hard wood, such as ebony, holly, mahogany, etc., for fret, scroll saw and inlay work; patterns for same.

Hat Machinery.—Great Southern Hat Co., J. R. Vest, V.-P., Box 100, Huntington, W. Va.—Prices on machinery for finishing 24 doz. hats daily; bodies bought in the rough.

Heating Plant.—J. W. Miller, Oriental, N. C.—Prices on hot-air or steam heating plant for \$7000 school.

Heating Plant, etc.—Sam D. Jones, business director Board of Education, Administration Bldg., 8th and Chestnut Sts., Louisville, Ky.—Bids until Oct. 1 for heating and ventilating plant for public school building to be erected at 42d and Herman Sts.; plans and specifications obtainable at office J. Earl Henry, Archt. and Engr.

Hoist (Electric).—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Oct. 27 to furnish electric hoist, schedule 7369; delivery Puget Sound; for schedules apply to navy pay office nearest navy-yard.

Hoisting Machinery.—Big Eagle Mining Co., Ottawa, W. Va.—Prices on hoisting machinery.

I Beams.—See Building Materials.

Insulating Material, etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish, at Brooklyn, naval supplies as follows: Water meter, schedule 7190; hydro-meters, etc., schedule 7287; rolled brass and billet steel, schedule 7309; insulating material, portable searchlights, schedule 7312; combined filters and coolers, deck light lenses, lavatories, showers, schedule 7319; rescue apparatus, coal baskets, deck scrubbing brushes, sheet cork, rubber dresses for diving purposes, sheathing felt,

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rigging leather, ships' bake ovens, schedule 7318; malleable brown and copper paint, schedule 7321; wrought pipe, schedule 7322; bar and sheet brass, schedule 7325; copper tubing, bibb and plug cocks, brass gate valves, schedule 7325.

Kitchen-ware.—See Furnishings (House.)

Knitting Machinery.—A. M. Walker, Box 325, San Antonio, Tex.—Data and prices on equipment for hosiery knitting mill.

Lathes.—See Machine Tools.

Lighting Fixtures.—Bethesda Presbyterian Church, Rev. H. L. Cathey, pastor, Lynchburg, Va.—Prices on lighting fixtures for \$475 church building.

Lumber.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 20 to furnish 12,000 ft. white ash firsts, 1 in. thick, 5 in. wide and 8 to 16 ft. long; 45,000 ft. white cedar, 1 in. thick, 4 in. and up wide, schedule 7382; delivery Philadelphia; 10,000 ft. white maple, 5 in., firsts and seconds, schedule 7382; 100 sound chestnut telephone poles, 30 ft. long, 21 in. in circumference, schedule 7391; delivery Washington; 10,000 ft. white pine, 12 in. wide and 16 ft. long, and 8000 ft. New England spruce, schedule 7391; delivery Newport, R. I.; 32,000 ft. Idaho soft white pine, 16,000 ft. yellow pine, schedule 7382; delivery Brooklyn; 18,000 ft. New England white pine, schedule 7382; delivery Portsmouth, N. H.; for schedules apply navy pay office nearest navy-yard.

Lumber.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 27 to furnish 42,000 ft. unseasoned merchantable Douglas fir, schedule 7367; delivery Puget Sound; 150,000 ft. rough common Douglas fir and miscellaneous lot spar stock Douglas fir, 68 ft. long, schedule 7385; delivery Norfolk and Philadelphia; for schedules apply to navy pay office nearest navy-yard.

Machine Shop Equipment, etc.—O. W. Kerner, Kernersville, N. C.—Prices on outfit for automobile repair work; also all kinds of automobile supplies.

Machine-Shop Equipment.—H. W. Dexter, Box 1417, Jacksonville, Fla.—Complete outfit for small general machine shop, including planer, shaper, upright drill press, radial drill, lathes to swing 36 in. and 16 in., power hack saw, power bolt cutter, power pipe cutter, steam hammer, punch and shear, etc.; also blacksmith outfit; purchase after inspection within 2 weeks.

Machinery.—See Manufactured Products, Alexander Gibb, Montreal, Canada.

Machine Tools.—Chas. J. Gehegan, 128 N. 20th St., Birmingham, Ala.—Prices on lathes from 14 in. by 6 ft. to 18 in. by 10 ft.; drill presses 20 in., 24 in. and 28 in.

Machine Tools.—Atlas Garage & Machine Co., J. C. Scott, Mgr., Memphis, Tenn.—Prices on 14-in. by 8-ft. American quick change lathe and small gear cutter.

Machine Tools.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish pipe-threading and cutting-off machine, schedule 7333; delivery Philadelphia.

Manufactured Products.—Alexander Gibb, 3 St. Nicholas St., Montreal, Canada.—Correspondence with American manufacturers; view to representation; now acting as manufacturers' agent, on commission, dealing mainly with wholesale jobbers, but also with manufacturers and railway companies; so far, has not represented machinery.

Metal-working Machinery.—Southern Roofing Co., J. T. Tucker, Pres., 914 Franklin St., Tampa, Fla.—Prices Oct. 1 on dies and machine for same to manufacture reversible lock and surface tin shingles.

Mining Machinery.—See Hoisting Machinery. See Screening Machinery.

Molds (Metal).—Eugene Moritz, care Leather Flooring Co., Glen Rock, Pa.—Addresses of manufacturers of metal forms or molds for making doll heads, arms and legs.

Paper and Paper Bags, etc.—National Closet Co., Sanford, N. C.—Addresses of manufacturers of paper bags, water-proof paper and water-proof cartons or bags.

Paving.—Board of Comms., Nashville, Tenn.—Bids, opened Sept. 29, to construct concrete curbs and sidewalks on Union St. from 6th to 8th Ave., and Childress St. from Pennock to N. 4th St.; plans and specifications on file with City Engr.

Paving.—Chas. E. Bolling, City Engr., Richmond, Va.—Bids Oct. 1 for grading, graveling, granite spall alley paving, granite sidewalks, curbs, gutters, granite block and Durax cube paving; proposal forms furnished on application.

Paving.—F. J. Von Zuben, City Engr., Fort Worth, Tex.—Bids until Oct. 6 to pave Houston St. from 10th to E. 1st St., containing about 10,000 sq. yds., with vitrified brick or creosoted wood block pavement; proposal forms and specifications on file with City Engr.; John F. Grant, Commr. Streets and Public Property; M. P. Harwood, City Secy.

Paving.—Baltimore (Md.) Board of Awards, care City Register, City Hall.—Bids until Oct. 7 to grade, curb and pave following streets and alleys: Plover, Mace, Morton and other alleys, contract No. 96, covering 7700 sq. yds. cement concrete paving; South St., from Lombard to Baltimore, and Guilford Ave., from Baltimore to Fayette St., contract No. 89, requiring 1550 sq. yds. wood block paving and 1250 sq. yds. granite block repaving; Dover St., from Fremont to Eutaw St., and various alleys, contract No. 97, 3670 sq. yds. vitrified block paving and 3400 sq. yds. granite block repaving; all on concrete base; specifications and proposal sheets obtainable from Paving Com., R. Keith Compton, Chrmn. and Consult. Engr., City Hall; \$5 deposit required for specifications; plans and profiles on file with Consult. Engr.

Paving.—J. R. Jones, Chrmn. of Street Com., Petersburg, Va.—Bids until Oct. 5 to construct about 4000 sq. yds. creosoted wood block roadway paving on E. Bank St. from 2d to Madison Sts.; R. D. Budd, City Engr.

Paving, etc.—Board of Affairs, J. F. Bedell, Prest., Charleston, W. Va.—Bids until Oct. 2 to curb and pave 24 streets; about 40,400 ft. curb and 68,300 sq. yds. paving; G. S. Brown, Loewenstein Bldg., City Engr.; date postponed from Sept. 21.

Paving.—City of Durham, N. C.—Bids at office City Clerk until Oct. 3 to improve Walker, Henderson and Elm Sts.; 5600 cu. yds. excavation, 5000 lin. ft. combination concrete curb and gutter and 1620 lin. ft. 8-in. terra-cotta sewer; plans and specifications at City Engr.'s office; W. G. Bradshaw, Chrmn. Street Committee.

Pencils.—See Printing (Lead Pencil) Machinery, etc., E. P. Simmons.

Pipe and Tubing.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 20 to furnish miscellaneous lot galvanized iron pipe, 2 in., schedule 7375; delivery Washington; 1398 ft. vitrified clay pipe, six-way multiple and miscellaneous lot vitrified pipe, schedule 7389; delivery Charleston; 15,000 unannealed brass tubes, schedule 7375; delivery Newport, R. I.; for schedules apply to navy pay office nearest navy-yard.

Pipe Cutters and Threaders.—See Machine Tools.

Pipe Fittings, etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Oct. 13 to furnish telephone cord, magnet and double conductor wire and pipe fittings, schedule 7352; delivery Brooklyn; for schedules apply to navy pay office nearest navy-yard.

Plumbing.—Treasury Dept., Office of O. Wenderoth, Supvr. Archt., Washington, D. C.—Bids until Oct. 21 for plumbing alteration at U. S. courthouse and postoffice, Texarkana, Ark.; drawings and specifications obtainable from above office or of custodian at Texarkana.

Printing (Lead Pencil) Machinery, etc.—E. P. Simmons, 215 Alamo Plaza, San Antonio, Tex.—Addresses of manufacturers or of dealers in presses to press advertising printing on lead pencils; also prices on pencils.

Propelling Machinery, etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish at Portsmouth, N. H., naval supplies as follows: Propelling machinery for 35-ft. motor boats, schedule 7289; squirrel blades, schedule 7319.

Pumps (Air).—W. T. Drury, Morganfield, Ky.—Addresses of manufacturers of pumps which by raising of water force air down, to be liberated under the water.

Rails, etc.—Guif. Freeport & Northern Ry. Co., C. L. Sharp, Gen. Mgr., Demon, Tex.—Delivered prices, Beasley, Tex., on 52 or 56-lb. relay steel for about 91 mi. railroad; also wants angle bars to match, including bolts and spikes. (Lately noted.)

Railway Construction Materials.—Lula-Homer R. R. Co., D. G. Zeigler, Chief Engr., Lula, Ga.—Prices on rails, splices, spikes, bolts, switches and frogs; will need 44-ft. span steel bridge and culvert pipe.

Refrigerating Equipment.—Navy Department, Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Oct. 27 to furnish and

install refrigerating apparatus, schedule 7291; delivery Brooklyn; for schedules apply to navy pay office nearest navy-yard.

Road Construction.—Palm Beach County Commrs., R. H. Rousseau, Chrmn., West Palm Beach, Fla.—Bids until Oct. 6 to construct cement sidewalks on north and south sides of site for new Courthouse; plans and specifications on file with Geo. O. Butler, Clerk.

Road Construction.—Randolph County Commrs., Wedowee, Ala.—Bids until Oct. 28 to grade, drain and surface with top soil or gravel part of Wedowee and Roanoke Rd., beginning at Wedowee; expenditure \$8000; W. S. Keller, State Highway Engr.

Road Construction, etc.—Leon County Commrs., Court, Centerville, Tex.—Bids until Oct. 1 to construct system of roads, bridges and culverts in Oakwoods Dist.; work will comprise construction of Oakwoods-Buffalo, Oakwoods-River and Oakwoods-Palestine Rds.; contractor to purchase \$10,000 bonds; detailed plans and specifications furnished by Browne & Wilder, Consult. Engrs., Navasota, upon receipt of \$5; L. T. Dashiell, County Judge.

Rope (Steel).—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 13 to furnish 3600 ft. plow steel hoisting rope, 3/4-in. diam., and 3630 ft. plow steel wire rope, 3/4-in. diam., schedules 7381 and 7376; delivery Norfolk; for schedules apply to navy pay office nearest navy-yard.

Saw (Metal).—Wysong & Miles Co., Greensboro, N. C.—Prices on cold metal cutting-off saw for structural steel and I beams up to 18 in.; must be in good working order.

Saws.—T. W. Minton & Son, Barboursville, Ky.—Prices on self-feed and hand-feed rip saws; also swing or inverted cut-off saws; new or second-hand; standard make.

Screening Machinery.—Big Eagle Mining Co., Ottawa, W. Va.—Prices on screening machinery.

Scroll Saw Work.—See Hardwood, etc.

Sewer Construction.—See Paving.

Sewer Construction.—John J. Higgins, Clerk to Mayor and Council, Farmers' Bank & Trust Co. Bldg., Rockville, Md.—Bids until Oct. 7 to construct sewer system and sewage-disposal works; 35,000 lin. ft. 6, 8 and 10-in. sewers; disposal plant to consist of Imhoff tank, dosing chamber and sprinkler filter or sand filters; plans on file with Mr. Higgins, Rockville, and Ezra B. Whitman, Consult. Engr., 1319 Fidelity Bldg., Baltimore; charge of \$5 for each set of plans and specifications.

Sewer Construction.—See Water-works and Sewers, Camp Hill, Ala.

Tenoner.—Patten Package Co., Calypso, N. C.—New or second-hand tenoner; double end; for crates; to take stock up to 24 in.

Toys.—John Bing, 381 4th Ave., New York. Correspondence (view to agency in Australia and New Zealand) with American manufacturers of toys.

Tubing (Brass and Steel), etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Oct. 13 to furnish steel tubing, rod and sheet steel, schedule 7342; brass tubing and sand, schedule 7343; rod and sheet bronze, bronze tubing and forgings, schedule 7344; delivery Newport, R. I.; for schedules apply to navy pay office nearest navy-yard.

Tunnel Construction.—Administrative Board, Richmond, Va.—Bids until Oct. 15 to construct tunnel under Broad St. on lines of 15th St. prolonged; C. P. E. Burgwin, 917 Main St., Richmond, Engr. in charge.

Valves.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Oct. 27 to furnish gate, globe, reducing and relief valves, schedule 7370; delivery Puget Sound; for schedules apply to navy pay office nearest navy-yard.

Ventilating Plant.—See Heating, etc.

Water-works Equipment.—The Mayor, Houma, La.—Bids until Oct. 6 on 3-in. vertical discharge centrifugal pump for minimum capacity of 200 gals. per minute against total head of 150 ft., direct-connected to 20 H. P., 2200-volt, 3-phase, 60-cycle motor, latter having starter equipped with no voltage or release; also various pipe and electric fittings, etc.

Water-works.—Mayor and Commrs., Tryon, N. C.—Bids until Oct. 3 to lay 13,000 ft. 4-in. cast-iron pipe, 4340 ft. 6-in. cast-iron pipe and additional 4-in., 3-in. and 2-in. cast-iron pipe; specifications and plans may be obtained from office of Mayor; bidders to examine specifications and plans and visit site of work.

Water-works and Sewers.—City of Camp Hill, Ala., W. C. Newell, Mayor.—Bids until Oct. 15 for water-works and sewer system; water plant to include power-house, 750-gal. motor-driven centrifugal pump; 500-gal. triplex, duplex or centrifugal pump, direct-connected or belted to 25 H. P. gas or oil engine; 80,000-gal. steel tank on steel tower; 2500 ft. 8-in. and 8900 ft. 6-in. cast-iron pipe; 26 double-nozzle fire hydrants; gate valves, etc.; sewer system consists of 12,500 ft. 8-in., 4300 ft. 10-in. and 900 ft. 12-in. terra-cotta pipe sewer; 52 manholes and 20 lamp holes; plans and specifications at office of Mayor, or obtainable from Engr., Edgar E. Kay, Tusculloosa, Ala.

Wheelbarrows.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 13 to furnish 300 wheelbarrows, schedule 7381; delivery Norfolk; for schedules apply to navy pay office nearest navy-yard.

Windows and Doors.—M. D. Hill, Rutherfordton, N. C.—Prices on windows and doors for \$2500 church building.

Wire, Metal, etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish following naval supplies at Washington, D. C.: Copper trolley wire, steel strand, trolley frogs, cylindrical wooden tubs, separator receivers, reinforcing wire, schedule 7306; pig iron, wash metal, ferro-manganese, nickel, hot rolled or forged and galvanized sheet steel, schedule 7308; electric fittings, schedule 7321.

Wireworking Machinery.—See Bed Spring Machinery, etc.

Woodworking Machinery.—Navy Department, Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 13 to furnish double-surfacing machine, schedule 7339; delivery Norfolk; for schedules apply navy pay office nearest navy-yard.

Woodworking (Veneer) Equipment, etc.—J. D. Pribble, care Monarch Carbon Co., Glasgow, W. Va.—Data (including catalogues, price lists, processes, statistical information, etc.) on establishment and equipment of plant to manufacture veneers.

Woodworking Machinery.—See Saws, T. W. Minton & Son.

Woodworking Machinery.—See Tenoner.

Literary Notes.

Official Report of the National Foreign Trade Convention. Publisher, The National Trade Council, 64 Stone street, New York city. Price \$1.50.

In view of the prevalent keen interest in extension of American foreign trade, the appearance of the "Proceedings of the National Foreign Trade Convention" is timely. As a collection of the papers read at the convention held in Washington this year and the discussion thereupon, the 474 pages contain a comprehensive presentation of our foreign trade problems. The volume opens with a notable address by the Secretary of Commerce, Mr. W. C. Redfield, in which he says: "I have talked with many European manufacturers in their own shops, and if there is one thing they dread more than another as regards the future of our own businesses, it is that America shall wake up to her privilege and her power. More than one English and German industrial manager has said to me that the thing he feared was the awakened mind and the awakened sense of power in American industry."

The volume continues with a symposium on the conditions of various sections of the United States with special reference to foreign trade. The papers in this symposium are from Messrs. James A. Farrell, president of the United States Steel Corporation; E. C. Simmons, chairman of the board of the Simmons Hardware Co. of St. Louis; Ellison A. Smyth, president of the Pelzer Cotton Mills of Greenville, S. C.; Capt. Robert Dollar, president of the Robert Dollar Steamship Co. of San Francisco, a veteran in the Oriental trade; James A. Arnold, secretary of the Texas Business Men's Association; John F. Fitzgerald, former mayor of Boston; H. G. Herget, president of the Illinois Manufacturers'

Association, and James J. Hill of the Great Northern Railway.

Mr. Hill's paper, entitled "The Future of Foreign Trade," is that which aroused such a furore in England because of his sharp contrast of the condition of industry and legislation imposed upon the German and British people. It is here for the first time fully published.

In view of the movement for revision of the navigation laws, Capt. Robert Dollar's "Suggestion on How to Obtain Foreign Trade" is a timely primer of trade-seeking methods.

Fairfax Harrison, president of the Southern Railway, contributes to the volume an excellent paper on "The Railroads and Export Trade," and P. A. S. Franklin, vice-president of the International Mercantile Marine, deals with "Ocean Transportation."

"The Relation of the Merchant to Import and Export Trade" is handled by George L. Duval of Messrs. Wessel, Duval & Co., a large American trading house in South America. John D. Ryan, president of the Amalgamated Copper Co., offers a studious paper on "The Sherman Law and Its Effect on Export Trade." Mr. H. C. Lewis, secretary-treasurer of the National Paper & Type Co., in his discussion of Mr. Ryan's paper points out that the best method for a small manufacturer economically and confidently to engage in foreign trade is through a co-operative foreign selling organization, but that the uncertainty regarding the application of the Sherman law is a menace to success along this line.

"Foreign Trade and Foreign Loans" is by Mr. Willard Straight, who represented the American group in various Chinese railway and Government loan negotiations. The attitude of the Administration toward overseas business is set forth in an address of Secretary Bryan.

Charles A. Conant discusses the effect upon foreign trade of the Federal Reserve Law.

Prof. Henry C. Emery of Yale University concludes that unless we are prepared to formulate a comprehensive and serious policy, it would be better not to try to promote foreign trade by tariff agreements. On the other hand, the importance of utilizing the tariff to compel cessation of foreign discrimination against American products is set forth by James R. Watson of the American Cotton Oil Co.

Edward N. Hurley, president of the Hurley Machine Co., Chicago, presents a vivid and important paper on Latin-American trade possibilities.

Trade with our insular dependencies is treated by the Hon. W. Cameron Forbes, former Governor-General of the Philippines, while Alba B. Johnson, president of the Baldwin Locomotive Works, presents a scholarly treatise on Central and South American trade problems.

The present perilous position of the American trade with China, due to the closing of the American door, is briefly, but forcibly, set forth by D. J. Menocal, manager of the International Banking Corporation at Peking, China.

Mr. Walding Ring, a veteran of the Australasian trade, points out its advantages, and Mr. M. A. Oudin, foreign manager of the General Electric Co., discusses Government assistance in foreign trade.

The Occupational Diseases. Their Causation, Symptoms, Treatment and Prevention. By Dr. W. Gilman Thompson. Publisher, D. Appleton & Co., New York, N. Y.

In this day of "safety first" movements, of workmen's compensation acts and of

widening personal interest on the part of the employers in the welfare of their employes, this work, designed primarily for physicians interested in the subject of the occupational diseases of modern life, is an excellent guide for students of social economics, social service workers, insurance actuaries and individuals concerned with problems of labor legislation or with workers in the chemical, textile and many other industries or trades in which the health of the workman is closely allied to problems of efficiency and humanitarian effort. The volume, which has four practical appendices, is divided into seven parts, dealing, respectively, with history, classification, general pathology and etiology, general remedial measures, diseases due to irritant substances, diseases due to harmful environment, special occupational diseases, influence of special conditions on the occupational diseases and miscellaneous occupational diseases grouped by industries. The author takes the ground that many processes of manufacture will always involve risk to health and many trades risk to limb or life, but that in each case the workman has the right of warning against the hazard and of such protection as modern scientific knowledge affords, but that on the other hand it is easy to exaggerate the hazards of particular industries, some of which are very serious, but very infrequent. It is the aim of this work to throw light upon all the problems involved in the question of occupational diseases.

FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters. Items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

FINANCIAL CORPORATIONS

Ala., Seale.—First National Bank inceptd.; capital \$60,000. Directors: H. T. Benton, Prest.; E. M. Anderson, V.-P.; T. W. Anderson, Cash.; W. E. Start and B. J. Jennings. H. T. Benton, Jr., is Asst. Cash. This is a conversion of the Bank of Seale.

Fla., Miami.—Commercial Financing Corp., capital \$10,000, has filed articles of incorporation. Among the stockholders are Frank D. Hill, Henry M. Parker, G. D. Brossier and Charles E. Garrahrant.

Ga., Dublin.—The Southern Exchange Bank, capital \$50,000, began business Sept. 15. Charter has been applied for; C. H. Williams, Prest.; J. T. Pope, 1st V.-P.; E. Smith, 2d V.-P.; B. M. Lewis, Cash.; J. R. Cherry, Asst. Cash.

Ga., Savannah.—Prudential Investment Co. has applied for charter; capital \$10,000; incorporators, J. M. Fagan, R. B. Price and C. P. Miller.

Md., Baltimore.—Maryland Mutual Liability Insurance Co. of Baltimore has filed articles of incorporation; directors, Summerfield Baldwin, Jr., Charles E. Falconer, William A. Riordan, David F. Williams, John Whitridge, C. Wilbur Miller, Leonard Greif, T. William Tinsley and Randolph Barton, Jr. Business is expected to begin by Nov. 1.

Miss., Meridian.—E. Cahn Banker, which has been operating as a private bank, is inceptd.; capital \$50,000; E. Cahn, Prest.; E. Cahn, Jr., V.-P.; Mark E. Dabb, Cash. Business has begun.

Mo., Avilla.—Local parties are reported organizing the Bank of Avilla with \$10,000 capital.

Mo., Farley.—Farmers' Bank chartered; capital \$20,000. Directors: Demas Jewett, Prest.; J. F. Meyer, V.-P.; R. H. Baumgardt, Cash.; Henry Lutte, E. F. Niemaum, A. E. Fankhanel and Robert Copeland. Business is to begin Sept. 28.

N. C., Asheville.—Bank of West Asheville is chartered; capital \$25,000; organizers, A. H. Miller and S. V. Miller of Greer, E. A. Wood of Clyde and L. G. Miller of Duncan.

N. C., Fuquay.—A new bank is being organized by Dr. J. M. Judd.

N. C., Raleigh.—Progressive Mutual Life Insurance Co. is inceptd. by S. B. Coley, F. P. Coley, F. P. Roberts, L. T. Smith, J. E. Harward, J. F. Winborne and others.

N. C., Rocky Mount.—National Bank of Rocky Mount, a conversion of the Bank of Rocky Mount, is inceptd.; capital \$100,000; surplus \$50,000; profits \$30,000; Thos. H. Battle, Prest.; R. H. Ricks, S. L. Arrington, V.-Ps.; Frank F. Fagan, Cash.; W. C. Robbins, Asst. Cash.

N. C., Varina.—Bank of Varina is chartered; capital \$10,000; incorporators, W. L. Johnson and Dr. J. M. Judd of Fuquay Springs, A. J. Bobbitt of Holly Springs and R. V. Murray, Willow Springs.

Okla., Adamson.—First State Bank is organized with C. S. Wingate, Prest.; J. R. Williams, V.-P.; C. E. Wagoner, Cash.

S. C., Cheraw.—Palmetto Trust Co. of Cheraw has been granted a commission; capital \$10,000; petitioners, P. A. Murray, Jr., B. H. Burroughs and R. B. May.

S. C., Greenville.—People's Insurance & Trust Co. of Greenville commissioned; capital \$5000; petitioners, S. C. Chandler, George H. Hart and Geo. A. Norwood, Jr.

S. C., Orangeburg.—Edisto Savings Bank has made application to convert into the Edisto National Bank; capital \$100,000.

Okla., Stroud.—Stroud National Bank chartered; capital \$25,000; J. B. Charles, Prest.; Lee Patrick, V.-P.; A. A. Seaton, Cash.; Nelle Neal, Asst. Cash. Business began Sept. 23.

Tenn., Nashville.—Tennessee National Bank chartered; capital \$30,000; E. A. Lindsey, Prest.; J. L. Campbell, Cash. This is a conversion of the Tennessee Bank & Trust Co.

Tex., Avery.—First National Bank, a conversion of the First State Bank, is approved; capital \$40,000.

Tex., Bogota.—Bogota National Bank, a conversion of the First State Bank, is approved; capital \$50,000.

Tex., Dallas.—Teal Investment Co., capital \$7500, inceptd. by O. A. Teal, J. H. Power and W. W. Graham.

Tex., Nixon.—First National Bank of Nixon has made application to organize; capital \$25,000; directors, P. H. Tom, H. C. Fristo, G. J. Schleicher, E. Wilson and M. L. Johnson.

Tex., Quitman.—First National Bank is approved; capital \$50,000. This is a conversion of the First State Bank.

Tex., Whitesboro.—City National Bank is approved; capital \$50,000. This is a conversion of the City Guaranty State Bank.

Va., Bedford City.—Citizens' National Bank chartered; capital \$50,000. S. S. Lambeth, Jr., Prest.; R. E. White, Cash.

Va., Charlottesville.—The People's National Bank and the Albemarle National Bank have consolidated under the name of the former institution with a capital of \$300,000 and surplus of \$100,000; G. R. B. Michie, Prest.; H. M. Gleason, V.-P.; Wm. W. Waddell, Cash.; H. E. Dinwiddie, Asst. Cash.

Va., Norfolk.—Universal Savings Corp. incorporated; capital \$30,000; David Stein, Prest.; Harvey Dickson, V.-P. Business is to begin immediately.

NEW SECURITIES

Ala., Auburn.—\$10,000 5 per cent. 30-year high-school bonds have been sold. B. B. Ross is Chrmn. High School.

Ala., Birmingham.—\$4,500,000 4½ per cent. 30-year water-works bonds are voted. Geo. B. Ward is Prest. City Commission.

Ala., Clanton.—\$25,000 5 per cent. 30-year water bonds have been purchased by J. B. McCrary Co. of Atlanta, Ga.

Ala., Georgiana.—The \$14,000 water-works bonds recently voted are 30-year 5 per cents. Address The Mayor.

Fla., Cocoa.—Question of issuing municipal improvement bonds is reported under consideration. Address The Mayor.

Fla., Daytona Beach.—\$15,000 20-year \$500 water-works bonds are being sold at par; ordinance being favorably considered increasing per cent. from 5 to 6. Address W. J. Braddock, Treas., care of East Coast State Bank.

Fla., Leesburg.—\$35,000 school bonds have been sold to the State Board of Education.

Fla., Pablo Beach.—Bids will be received at any time by J. M. Mill, Town Clerk, for \$25,000 sewer and \$10,000 electric light 6 per cent. 30-year bonds.

Fla., Tavares.—Bids will be received until noon Oct. 17 for \$500,000 6 per cent. 15-30-year

\$500 Lake county road bonds; dated Jan. 1, 1914; maturity 1929 to 1944. H. H. Duncan is Clerk Board of County Commrs.

Fla., West Palm Beach.—\$100,000 seawall, sewerage and street bonds are voted. C. S. Anderson is Mayor.

Ga., Buchanan.—Bids will be opened about Jan. 1 for \$15,000 5 per cent. \$1000 school bonds voted Sept. 19. Dated Jan. 1, 1915; maturity 1926-1931. M. Bullard is Chrmn., School Board.

Ga., Cleveland.—\$10,000 5 per cent. Cleveland School Dist. bonds are voted. J. B. Skelton is Chrmn. Board of Trustees, and A. H. Henderson, Jr., Secy.

Ga., Dallas.—Bids will be received until Oct. 7 for \$15,000 6 per cent. school bonds. J. R. Lawrence is Mayor.

Ga., Donaldsonville.—Election is soon to be held to vote on \$10,000 6 per cent. ice-plant and cold-storage bonds. Address The Mayor.

Ga., Helena.—Election will be held Oct. 12 to vote on \$13,000 5 per cent. 30-year water-works and electric-light \$500 bonds. J. R. McLaughlin is Mayor.

Ga., Lafayette.—Election is to be held Nov. 10 to vote on \$19,000 5 per cent. 29-year sewer bonds. D. W. Herndon is Mayor. (Previously mentioned.)

Ga., Pavo.—\$6000 5 per cent. 12-year electric-light bonds have been purchased by J. B. McCrary & Co., Atlanta.

Ga., Rockmart.—\$5000 5 per cent. electric-light bonds are being offered at private sale. A. H. Graefter is City Clerk.

Ky., Hodgenville.—All bids received Sept. 26 for \$14,000 5 per cent. 5-20-year \$1000 water-works bonds were rejected. Will M. Graham is City Clerk.

La., Glenmora.—Election is to be held Oct. 12 to vote on \$25,000 5 per cent. 10-year bonds School Dist. No. 27, Rapides parish. Address Police Jury, Alexandria, La.

Md., Baltimore.—Ordinance submitting \$300,000 sewerage loan at the November election has been amended, increasing the rate of interest from 4 to 4½ per cent. Address Commissioners of Finance.

Md., Baltimore.—Ordinance is being passed by the City Council for a vote at the November election on a \$1,500,000 loan for completing Key Highway, widening St. Paul St. and dredging the harbor. Address Commissioners of Finance.

Miss., Columbus.—Bids will be received until 2 P. M. Oct. 5 by Board of Supvrs., B. A. Lincoln Clerk, for \$50,000 11-20-year bonds Road Dist. No. 2, Lowndes county, interest not exceeding 6 per cent.; denomination \$100.

Miss., Jackson.—Bids will be received until 10 A. M. Oct. 5 for \$8000 6 per cent. bonds Byram Consolidated School Dist. Address Board of Supvrs. Hinds County.

Miss., Louisville.—\$4000 school bonds have been purchased by A. C. Schryver of Louisville.

Miss., Pascagoula.—Jackson county has authorized the sale of \$3000 road bonds. Address County Commrs.

Miss., Port Gibson.—Board of Supvrs. Claiborne county proposes at its October meeting to sell \$40,000 5 per cent. bonds.

Miss., Starkville.—\$130,000 Bond No. 1, Oktibbeha county, road bonds are voted. Address Board of Supervisors.

Miss., Tunica.—\$30,000 5½ per cent. 5-20-year Tunica County Agricultural High School bonds were purchased by Terry, Briggs & Stayton, Toledo.

Mo., Moberly.—Election is to be held in Randolph county in November to vote on \$100,000 courthouse and \$30,000 infirmary bonds. Address County Commrs.

N. C., Bayboro.—\$10,000 of bonds for school at Oriental, Pamlico county, have been sold to an Ohio concern. Taylor B. Attmore is Supt. of Public Instruction, Pamlico county.

N. C., Marshall.—Bids will be received until noon Oct. 8 by W. C. Sprinkle, Chrmn. Board of Road Commrs., for \$150,000 5 per cent. 30-year Madison county road bonds.

N. C., Tryon.—City has sold \$20,000 6 per cent. 20-year water bonds. E. E. Missilldine is Mayor.

N. C., Salisbury.—Bids will be received at the office of the Clerk of the Superior Court for Rowan county, at Salisbury, until 10 A. M. Nov. 2 for \$12,000 6 per cent. bonds Kerr Creek Drainage Dist., Rowan county. W. M. Erwin is Secy. Board of Drainage Commrs. for said district.

N. C., Salisbury.—Bids will be opened at the office of the Clerk of the Superior Court for Rowan county at Salisbury until 10 A. M.

[For Additional Financial News, See Page 76.]

Merchants-Mechanics National Bank

South and Water Sts. BALTIMORE, MD.
 DOUGLAS H. THOMAS, President
 JNO. B. RAMSAY, V.-P. and Chm. Bd. of Dir.
 WM. INGLE, Vice-President
 JOHN B. H. DUNN, Cashier
 Capital \$2,000,000 Deposits \$21,670,000
 Surplus and Profits \$2,175,000
 Accounts of Banks, Bankers, Corporations and Individuals solicited.
 We invite correspondence

Edwin Warfield, President

Fidelity and Deposit Company of Maryland

Home Office: Baltimore

Total Assets over \$11,000,000.00

All Kinds and Classes of Surety Bonds and Casualty Insurance

Largest and Strongest Surety and Casualty Company in the World

The National Exchange Bank

OF BALTIMORE, MD.
 Hopkins Place, German and Liberty Streets
 Capital \$1,000,000
 August 9th, 1913, Surplus and Profits, \$764,091.00
 OFFICERS
 WALDO NEWCOMER, President.
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 R. VINTON LANSDALE, Cashier.
 C. G. MORGAN, Asst. Cashier.
 Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals Invited.

JOHN NUVEEN & CO.

First National Bank Building
 CHICAGO
 We purchase SCHOOL, COUNTY and MUNICIPAL BONDS. Southern Municipal Bonds a Speciality.
 Write us if you have bonds for sale.

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Certified Public Accountant
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Union Central Bldg. CINCINNATI, OHIO

**Three Ways to Manage Your Factory**

Three ways—rule o' thumb, rule o' red tape, rule o' reason—to manage a plant.

You may make money in spite of rule o' thumb or rule o' red tape. You're bound to make money by rule o' reason—or know where, how and why you're losing it. Then you stop the losses—and make money!

The latest Burroughs book—deals with efficient management as well as cost keeping, because cost keeping must help management to make costs lower and not merely find out what costs are. They may be too high.

Send for "Efficient Cost Keeping," a 256-page Burroughs business book that shows how good management and good cost keeping make for good business. Write for it—on your letterhead, please.

Burroughs Adding Machine Co.
 80 Burroughs Block, Detroit, Michigan

The First National Bank

17 South St., Baltimore, Md.
 Capital, - - \$1,000,000
 Surplus and Net Profits, 450,000
 Deposits, - - 8,500,000

Especially well equipped to handle the business of Southern Banks, Corporations, Individuals and Manufacturers. We cordially invite correspondence and interviews.

Delaware Trust Company

Wilmington, Delaware
 INCORPORATING under broad, liberal, safe and stable Delaware laws. A fully equipped department for proper organization and registration of corporations. BANKING AND TRUST department gives special attention to out of town customers' accounts. TITLE DEPARTMENT examines and guarantees title to realty throughout Delaware. REALTY DEPARTMENT has sites for manufacturing industries. Modern Methods of management of property.

J. ERNEST SMITH, President and Gen. Counsel.
 WM. G. TAYLOR, Vice-Pres. and Treasurer.
 HARRY W. DAVIS, Vice-Pres. and Secretary
 W. W. PUSEY, 2nd, Title and Real Estate Officer

The First National Bank

OF KEY WEST, FLA.
 United States Depository and Disbursing Agent
 Capital \$100,000
 Surplus and Undivided Profits - - 40,000
 A general banking business transacted
 Special attention given to collections

FIRST NATIONAL BANK

RICHMOND, VIRGINIA
 Capital and Surplus, - - \$3,000,000
 JNO. B. PURCELL, President
 JNO. M. MILLER, Jr., Vice-Pres.
 W. M. ADDISON, Cashier

GO SOUTH!

FOR SALE Timber, Coal, Iron, Ranch and Other Properties
 Southern States, West Indies, Mexico
 SOUTHERN STATES DEVELOPMENT CO.
 (Brokers) Geo. B. Edwards, Pres.
 Tribune Building NEW YORK, N. Y.
 Confidential Negotiations, Investigations, Settlements, Purchases of Property

We Buy Bonds

City, County, School and Road, from Municipalities and Contractors
 WRITE
 THE PROVIDENT SAVINGS BANK & TRUST CO.
 CINCINNATI OHIO

Young & Selden Co.

BALTIMORE, MD.

DESIGNERS

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High-Class Stationery

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We Finance

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 With Records of Established Earnings

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Electric Bond and Share Company

(Paid-up Capital and Surplus, \$12,500,000)
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COMMISSION MERCHANTS

NEW YORK PHILADELPHIA CHICAGO
 87-89 Leonard Street 120 Chestnut Street 206 S. Market Street

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FROM MUNICIPALITIES OR CONTRACTORS

We are in position to pay HIGHEST PRICES. Write or wire us your offerings.

THE NEW FIRST NATIONAL BANK Assets, \$8,000,000 COLUMBUS, O.

A FORTUNE TO THE INVENTOR

who reads and heeds it, is the possible worth of the book we send for 6c. postage.
 Write us at once.
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CLAUDE W. OWEN, ATTORNEY AT LAW

Evans Building WASHINGTON, D. C.
 Specialist in Practice Before the Interstate Commerce Commission.
 Rate Information and Data Furnished.

FEDERAL SALES & SERVICE COMPANY

MUNSEY BUILDING WASHINGTON, D. C.
 Agents for Government Contractors
 We solicit representation of manufacturers in connection with Government contracts on commission basis. Long and successful experience. References.

Capital for Southern Industries**Peabody, Houghteling & Co.**

(Established 1865)

10 So. La Salle Street CHICAGO, ILLINOIS

To Manufacturers and Capitalists

Contemplating the Establishment of Industrial Enterprises

Attention is called to the exceptionally favorable location of

NEWPORT NEWS, VA.

on Hampton Roads, fifteen miles from the sea. Deep water, railway and sea transportation facilities unrivaled. Climate salubrious. Apply to

W. B. LIVEZEY, President OLD DOMINION LAND COMPANY
 NEWPORT NEWS, VA.

ESTABLISHED 1884

State, City and Corporation Securities Purchased Direct or from Holders.

Temporary Loans Arranged on Such Collateral.

Deposits, Dec. 31, 1912.....\$ 9,132,372.15 Increase, \$1,970,862.54
 Dec. 31, 1913.....11,103,234.69

WE PAY 3% INTEREST SUBJECT TO CHECK

Largest Capital and Surplus of any financial institution in Maryland or south of Washington, D. C.

MERCANTILE TRUST & DEPOSIT CO.

OF BALTIMORE

A. H. S. POST, - - President
 FRED G. BOYCE, Vice-President WILTON SNOWDEN, Vice-President
 JOHN McHENRY, Treasurer J. R. WALKER,

5000 U. S. Bank Bond LETTERHEADS \$9.00

Attractively printed, packed in boxes and shipped prepaid to any point east of Mississippi river. Envelopes to match at same price. Send postal for samples of paper and styles of printing.
 SOUTHWEST VIRGINIA ENTERPRISE, Wytheville, Virginia

The Cutler Mail Chute

A recognized necessity in modern buildings of the office, hotel and apartment class.

Send for circulars and full information to the sole makers.

CUTLER MAIL CHUTE CO. Rochester, N. Y.

Nov. 2 for \$18,000 6 per cent. bonds Sills Creek Drainage Dist. S. M. Hart is Secy. Board of Drainage Comms. of said district at Mt. Ulla, N. C.

N. C., Warsaw.—\$25,000 5 per cent. 20-year railroad-aid bonds are voted by Albertson and Limestone township, Duplin county. Address County Comms., Kenansville, N. C.

Okla., Haskell.—Bids were received until Sept. 28 by Louis Cox, City Clerk, for \$20,000 sewer bonds.

Okla., Stillwell.—No bonds were authorized by Adair county at the election Aug. 5.

Tenn., Jackson.—Bids will be received until noon Oct. 6 for the following 6 per cent. bonds: \$6306 general-improvement bonds, series No. 1, dated Oct. 1, 1914, maturing Oct. 1, 1919; \$6295 general-improvement bonds, series No. 2, dated Oct. 1, 1914, maturing Oct. 1, 1924; \$12,505 street-improvement bonds, series Nos. 4, 5, 9, 10, 11, 12 and 25, dated Oct. 1, 1914, maturing 1 to 5 years; \$12,610 street-improvement bonds, series Nos. 2 and 3, dated Oct. 1, 1914, maturing 1 to 5 years. C. E. Griffin is Mayor and F. E. Howard City Recorder. Further particulars will be found in the advertising columns.

Tenn., Knoxville.—\$25,000 6 per cent. 5-year street-improvement \$1000 bonds were purchased at par and accrued interest by E. E. McMillan, V.-P. Third National Bank, Knoxville.

Tenn., Manchester.—Bids will be opened Oct. 24 for \$8000 6 per cent. 5-10-year school bonds. Address M. Wright Hickerson, Mayor.

Tenn., Nashville.—\$1,400,000 6 per cent. one-year loan refunding State of Tennessee bonds have been sold at par to the National Park Bank of New York. Geo. E. Blake is Secy. State Funding Board.

Tex., Anahuac.—\$92,000 Chambers county bonds are sold. Address County Comms.

Tex., Aransas Pass.—No sale was made of the \$13,000 5 per cent. 20-40-year water and street bonds offered Sept. 15. Address The Mayor.

Tex., Austin.—The Attorney-General has approved the following securities: \$500 5 per cent. 5-20-year bonds Wheeler county common school Dist. No. 20; \$3300 5 per cent. 10-20-year bonds Martins Mill Independent

School Dist., Van Zandt county; \$10,000 5 per cent. 30-40-year bonds Avery Independent school dist., Red River county; \$14,000 5 per cent. 10-40-year Lampasas county bridge bonds; \$1000 5 per cent. 10-20-year bonds Bowie county common school dist. No. 65; \$5000 5 per cent. 20-40-year bonds Tarrant county common school dist. No. 33; \$5000 5 per cent. 5-10-year bonds Goliad county common school dist. No. 21; \$50,000 5 per cent. 30-year Kaufman county road-improvement bonds.

Tex., Barstow.—Bids will be received until 10 A. M. Oct. 13 by Ward County Irrigation Dist. No. 1 for \$475,000 6 per cent. bonds. Further particulars will be found in the advertising columns.

Tex., Bonham.—Bids will be received at any time by F. H. White, City Clerk, for \$10,000 5 per cent. 10-40-year \$500 school bonds, dated Aug. 15, 1914.

Tex., Cleburne.—City contemplates issuing \$125,000 school and \$180,000 sewer bonds. C. W. Breech is Mayor.

Tex., Eagle Pass.—No satisfactory bids were received Sept. 23 for \$35,000 5 per cent. 10-40-year Maverick county road and bridge improvement bonds. Ben V. King is County Judge.

Tex., Granbury.—\$20,000 water-works bonds were defeated.

Tex., Harlingen.—\$750,000 bonds have been voted by Cameron county irrigation Dist. No. 1. Address County Comms.

Tex., Houston.—Election is to be held Oct. 28 to vote on \$5,450,000 5 per cent. 1-40-year bonds as follows: Harbor, \$3,000,000; sewers, \$1,000,000; disposal plants, etc., \$1,000,000; schools, \$300,000; parks, \$250,000; denomination \$1000. Ben Campbell is Mayor.

Tex., Kaufman.—\$7500 5 per cent. 14-40-year street-improvement bonds have been awarded the Western Construction Co. at par and interest.

Tex., Kerrville.—\$40,000 5 per cent. 10-40-year road bonds are reported sold by Kerr county. Address County Comms.

Tex., Kountze.—\$125,000 Hardin county road bonds are voted. Address County Commissioners.

Tex., Liberty.—\$6000 5 per cent. 10-40-year bonds Improvement Dist. No. 1, Liberty

county, are being offered. A petition is also being circulated calling for election to vote on road bonds. Address County Comms.

Tex., Matador.—The \$17,000 5 per cent. 40-year Roaring Springs Independent school Dist., Motley county, \$1000 bonds offered Sept. 15 were not sold because bids were not acceptable. Address G. E. Hamilton, Matador.

Tex., Mineola.—\$25,000 5 per cent. 10-40-year water bonds are being offered by J. M. Falkner, City Clerk.

Tex., New Braunfels.—\$17,000 5 per cent. 10-40-year Comal county road bonds were purchased at par and interest by local citizens. Address County Comms.

Tex., Oakville.—Election ordered Sept. 25 to vote on \$100,000 Live Oak county road bonds is called off.

Tex., Post.—\$22,000 of an issue of \$50,000 5 per cent. 40-year Garza county road bonds have been purchased at par by the Garza county school fund.

Tex., Rockwall.—Rockwall county is offering for sale \$20,000 5 per cent. 5-20-year road-improvement bonds. Address County Comms.

Tex., Terrell.—Evening Star School Dist., Kaufman county, has voted improvement bonds, which will be sold to the Public School Fund. Address Board of Trustees.

Va., Chatham.—\$50,000 5 per cent. 34-year Dan River Dist., Pittsylvania county, bonds have been purchased by Harris, Forbes & Co., New York.

W. Va., Weston.—Election is to be held in Freeman's Creek Dist., Lewis county, Nov. 3 to vote on \$100,000 5 per cent. 20-year road-improvement bonds. H. W. Lightburn is Clerk County Court.

FINANCIAL NOTES

The Virginia-Carolina Chemical Co. has declared a dividend of 2 per cent. on its preferred stock for the quarter ended Sept. 30.

The American Institute of Banking will hold its convention next year at San Francisco, this decision having been reached at the final session of this year's convention at Dallas, Tex. Wm. S. Evans of Philadelphia was elected president, and Thomas H. West of Portland, Ore., vice-president. The executive council is composed of R. S. Hecht of New Orleans, F. C. Ball of St. Louis, J. W. Rubincamp of Chicago, F. C. Devereaux of Washington and H. J. Dreher of Milwaukee.

Preparations are being made at Richmond, Va., for the annual convention of the American Bankers' Association, which will be held there October 12 to 17. A series of entertainments is being arranged by Richmond bankers and business men covering five days, and including a banquet, a ball and reception by the Governor, a musicale, a luncheon, a steamboat excursion, automobile trips, etc.

VIRGINIA-CAROLINA CHEMICAL CO.
Office of Treasurer.
Richmond, Va., Sept. 24, 1914.
Dividend No. 76.

The Board of Directors of this Company have this day declared a dividend of Two (2%) Per Cent., the same being consecutive quarterly dividend No. 76 on the Preferred Stock of this Company, payable November 15, 1914, when checks will be mailed to all Preferred Stockholders of record at the close of business on September 30, 1914.

S. W. TRAVERS,
Treasurer.



Fair Play in Telephone Rates

IT is human nature to resent paying more than any one else and to demand cheap telephone service regardless of the cost of providing it.

But service at a uniform rate wouldn't be cheap.

It would simply mean that those making a few calls a day were paying for the service of the merchant or corporation handling hundreds of calls.

That wouldn't be fair, would it? No more so than that you should pay the same charge for a quart of milk as another pays for a gallon.

To be of the greatest usefulness, the telephone should reach every home, office and business place. To put it there, rates must be so graded that every person may have the kind of service he requires, at a rate he can easily afford.

Abroad, uniform rates have

been tried by the government-owned systems and have so restricted the use of the telephone that it is of small value.

The great majority of Bell subscribers actually pay less than the average rate. There are a few who use the telephone in their business for their profit who pay according to their use, establishing an average rate higher than that paid by the majority of the subscribers.

To make a uniform rate would be increasing the price to the many for the benefit of the few.

All may have the service they require, at a price which is fair and reasonable for the use each makes of the telephone.

These are reasons why the United States has the cheapest and most efficient service and the largest number of telephones in the world.



Cut annual fuse maintenance 80% and secure positive electrical protection under all conditions.

ECONOMY RENEWABLE CARTRIDGE FUSES

When an Economy fuse blows, you don't throw it away—you simply insert a new renewal element and have virtually a new fuse. 25 blowouts of an ordinary non-refillable fuse (100 Amps., 250 Volts) cost \$10.12½, while 25 blowouts of an ECONOMY renewable cartridge FUSE of the same capacity cost \$2.10—and remember Economy fuses give absolute protection—they do not vent fire nor hold a sustained arc. They are the only renewable fuses uniformly rated. Economy fuses meet the performance specifications governing the use of such devices.



Why spend four times more than necessary in fuse maintenance? Write today for Bulletin M. R.—and list of prominent satisfied users.

Two renewal elements furnished free with each Economy fuse. Figure the saving yourself.

Economy Fuse & Mfg. Co. Kinzie and Orleans Sts.
CHICAGO

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy One System Universal Service

Quality
Is
Economy

UNIVERNISH

*Has Qualities which make it
Especially Economical*

*Compared with Old-Method varnishes,
it is convenience and certainty.*

It means *one* finishing varnish
for the job, instead of two or three.
It does away with the extra cans
and the extra cleanings of brushes.
It avoids mistakes and accidents.
It is safe and sure and foolproof.

*Compared with other New-Method varnishes,
it is a vital improvement.*

It is *the* New-Method varnish
which does not thicken in the can
nor clog the Painter's brush.
It remains a clear, pure liquid.
It is easy-working and free-flowing.
It requires vastly less labor.
It gives a smooth, clean finish
which is especially beautiful
and durable.

We think we are quite conservative
in saying that it *saves 20%*
of the finishing cost.

The Varnish That Lasts Longest

Murphy Varnish Company
FRANKLIN MURPHY, President
Associated with Dougall Varnish Company, Limited,
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NEWARK
AND
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Classified Opportunities

MEN WANTED

UNDERSIGNED COUNSEL will confidentially negotiate preliminaries for important executive, technical, administrative and professional positions insuring strictest privacy. Not an agency, but a highly-endorsed, high-grade method of negotiating preliminaries only, for \$3000 to \$12,000 men. Send address only, for explanation. R. W. Bixby, Lock Box 134-E8, Buffalo, N. Y.

I WOULD like to hear from sales engineers and steam specialty salesmen who would be open to carry a well-known line on commission basis, devoting either entire time or as a side line; good money assured. H. F. Maurel, 604 W. 115th St., New York City.

AGENTS WANTED among supply dealers and salesmen for an exceptional house-lighting machine, suitable for small homes as well as large; simple, durable, economical; satisfaction guaranteed to customers; had excellent selling points; a live proposition. Write for terms. The Alexander N. Milburn Co., Baltimore, Md.

WANTED—Stock and bond salesman with proven ability to wholesale stock to banks and syndicates in Southern States only. This stock is a high-grade investment and should pay 3 1/2% per cent. to purchaser. Give references in first letter. Address No. 1621, care Manufacturers Record, Balto., Md.

PARTNER WANTED

WANTED—Partner with \$1500 or \$2000 to establish manufacturing plant to manufacture cement stone, plain and ornamental trimmings for buildings, monuments, compo and staff work, fountains, vases, etc.; town of 15,000 and fine territory; no competition; one with experience preferred, though not entirely essential. Address P. B. Ligon, Tyler, Texas.

AGENCIES WANTED

EXPERIENCED SPECIALTY SALESMAN covering South Florida wants additional lines in engineering specialties; power plant equipment, structural and ornamental steel. Address Box 558, St. Petersburg, Fla.

WANTED—Sales agency for all lines pertaining to builders' specialties; East Tennessee as territory; can furnish satisfactory references to interested concerns; modern warehouse facilities. Address Daniel Briscoe, Jr., 325-327 State St., Knoxville, Tenn.

SITUATIONS WANTED

BY EFFICIENCY ENGINEER, vicinity of Baltimore, Md.; office and plant efficiency; member of Efficiency Society. Address No. 1615, care Manufacturers Record, Balto., Md.

A YOUNG MAN with some experience as salesman desires to represent in Baltimore or in Atlanta a house manufacturing some staple line of goods; highest references. Correspondence desired only with houses of highest standing. Address No. 1595, care Manufacturers Record, Balto., Md.

POSITION WANTED as master mechanic, machinist, locomotive or stationary engineer; South preferred. Address No. 1616, care Manufacturers Record, Balto., Md.

A-1 SALESMAN, American, thoroughly familiar with Chile, Peru, Argentina, Bolivia, Ecuador and Columbia, speaking Spanish and French, would entertain proposition to represent merchandising or manufacturing houses in South America. Address No. 1622, care Manufacturers Record, Balto., Md.

BLAST FURNACE SUPERINTENDENT OR MANAGER—Merchant or steel works furnaces; wide experience organizing, operating and managing; technical graduate; know how to combine quality, quantity, low cost. Address No. 1619, care Manufacturers Record, Balto., Md.

EDUCATIONAL

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical, Electrical and Chemical Engineering and General Science, leading to the degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Ch.E.), and Bachelor of Science (B.S.). Also special courses. Splendidly equipped new engineering laboratories. Send for catalogue to Registrar.

DRAFTING

PATENT OFFICE DRAWINGS; accurate and prompt workmanship by experienced draftsman. Address T. D. Conn, 1115 Brentwood Ave., Baltimore, Md.

MODELS

MODELS MADE FOR INVENTORS.—General machine work. Designing and perfecting. Developing automatic devices and machinery. In a position to do all kinds of light tool and machine work. Prices reasonable. Estimates cheerfully given. Ideal Machine Works, 64 Ann Street, New York City.

RATES AND CONDITIONS

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 25 lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order, check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 18c per line; 300 lines 16c per line; 500 lines or more, 15c per line.

MOTION PICTURES

USE MOTION PICTURES for greater efficiency in selling. Equip your salesmen with moving pictures of your products. We make pictures for every purpose. R. & F. Motion Picture Co., 1730 Prairie Ave., Chicago, Ill.

SHEET-IRON SPECIALTIES

WANTED—Sheet-iron specialties and stampings to manufacture on contract; parts or complete. Send sample or sketch. Also have silo attractive agency proposition. C. C. Fouts Tank & Silo Co., Middletown, Ohio.

BUSINESS OPPORTUNITIES

A GOOD LIVE LAND MAN to take one-half interest in the best selling contract on well-located lands in the South; very little capital required, as the business is well established; should clear \$100,000 in four years. References required and furnished. Write for particulars. Address No. 1604, care Manufacturers Record, Balto., Md.

INFORMATION any subject. Congress, corporations, investigations, Gov't bids, trade opportunities. Miscellaneous data and statistics. Researches. Daily news letter. General Information Bureau, Box 1341, Wash., D. C.

FOR SALE—All or controlling interest of well-established and profitable wagon and buggy plant in Abingdon, Va.; excellent territory and good railroad facilities; now doing good business in five States; best reason for selling. R. B. Hagy, Abingdon, Va.

MANUFACTURER of children's and women's wash dresses would like to correspond with reliable jobbing house for handling output. Address P. O. Box No. 472, Spartanburg, S. C.

CLAY TRACT of 41 acres on Tidewater & Western R. R. at crossing of county road about one mile from Bermuda on James River, known as Epps' Crossing. Tract has been tested over its entire surface, showing clay exists to the depth of 4 1/2 feet and covers entire property with overburden of 3 to 9 inches. The State Geologist reports as being the best found on the coastal plain, suitable for pipe, tile, pavers, fireproofing, and stiff-mud and dry-press face brick. Burns a dark cherry red, drying easily and safely.

This valuable clay bed, with a manufacturing site at Chester, for sale reasonable. The manufacturing site, consisting of between 3 and 4 acres, is on A. C. L. R. R. at junction of Tidewater & Western R. R., affording splendid shipping facilities to North or South by A. C. L. N. & W., S. A. L. T. & W., or by water. With proper development should prove a good money-maker. Full particulars upon request. Address Central Realty Co., Richmond, Va.

WANTED—An established agency capable of selling 25,000 acres Florida land. Phosphate feature makes proposition exceptionally attractive and is big enough to interest any agency. Give particulars your service. Box 317, Tampa, Florida.

FOR LEASE—Pine stove and heading mill, Western Georgia; rent and percentage. Cooperage Mill, Box 1443, Atlanta, Ga.

ABILITY—CAPITAL—PLANT.—A merchant and former manufacturer would make a connection with an experienced man or men in profitable business justifying enlargement and co-management in vicinity of New York; could furnish \$10,000 to \$50,000 or more active, working capital; advertiser rated high credit and (if needed) controls plenty land on tidewater and many railroads with two small mill buildings. Address, giving some ideas of nature of business, services needed, amount of capital desired and references, "Advance," P. O. Box 521, New York.

HIGH-GRADE engineering company, fine office, strong force, will handle factory sales account. A. F. S. Co., 656 Leader Building, Cleveland, Ohio.

AN up-to-date and long-established factory with good facilities would be glad to open communication with anyone having machines or appliances which are in demand, and after investigation would take on the manufacturing of one or more meritorious articles. Address No. 1623, care Manufacturers Record, Balto., Md.

ADVERTISER, now district sales manager for large corporation, is about to form sales machinery concern, and invites correspondence with those wishing to invest at least \$1000, netting 20 per cent. Address H. Jeffery, Bourse Building, Philadelphia, Pa.

PUBLIC UTILITY PROPERTIES WANTED.—Public utility properties in towns of three thousand population or over, larger the better. Properties with good earnings present or prospective. Also, water-power sites with assured markets, capable of developing from 300 to 5000 electrical horse-power. Properties must stand closest investigation. Correspondence solicited. Address No. 1625, care Manufacturers Record, Balto., Md.

I HAVE apartments, hotels, business and investment properties everywhere to exchange for plantations, farms, timber, colonization and coal land. I have a deal for anything you have, anywhere. Also, fine farm and timber lands at lowest cash prices. Write me at once. Arthur M. Connor, 223-4 Oxford Bldg., 726 14th St. N. W., Wash., D. C.

WANTED—To connect with individuals who will be willing to invest \$15,000 in a very successful graphite company in the best section in the South. The company is most successful in selling its product, and with additional capital can enjoy increased sales at a large profit. The best references can be given. Address P. O. Box 732, Atlanta, Ga.

BUSINESS MAN, familiar with advanced selling methods, company formations, etc., married, and of some means, will consider permanent sales connection with established Southern real estate or land company; may later take financial interest. Address Box 688, Birmingham, Ala.

INDUSTRIES WANTED

MISCELLANEOUS

HENRIETTA, TEX., offers unlimited supply natural gas to manufacturers; fire brick, tile shales; water; low taxes; healthful; 3 railroads; unusual opportunity legitimate enterprises. Address Booster Club.

INDUSTRIAL PLANTS FOR SALE

WOODWORKING PLANT

TO MANUFACTURERS.—For Sale—A thoroughly modern fireproof factory building, on terms to suit purchaser; building only 6 years old and in perfect condition; fully equipped with modern woodworking machinery, which will be sold either separately or included in buildings and land; building is of concrete and steel, sawtooth construction, with fine office rooms on second floor; floor space, 71,000 square feet, divided into 8 rooms with fireproof partitions; total ground space nearly 10 acres; plenty of room for expansion; complete hot-air and dust collecting system and electrical equipment for light and power; on Pennsylvania Railroad at Salem, Ohio. For full particulars address S. Grove, Jr., Salem, Ohio.

BRICK PLANT

BRICK PLANT FOR SALE.—Brick manufacturing plant with 30 acres land at railroad station within 11 miles of Fort Worth (100,000 population). Price \$10,000. Unimproved. Full details on application to the Cattlemen's Trust Co., Fort Worth, Texas.

LIGHT PLANT AND COTTON GIN

FOR SALE—Electric-light plant and cotton gin; worth \$20,000; sell for \$15,000; third cash. J. McDade, Conroe, Texas.

MANUFACTURING PLANT

FOR SALE—Manufacturing plant, 13,000 ft. floor space; brick, mill construction warehouse; 400 ft. railroad switch; ideal location, Tidewater Virginia; 150,000 population; 2 acres; 3 up-to-date cottages; trolley service; rail and water transportation; 300 ft. street frontage; paved street 100 ft. wide; boilers and engine installed; suitable woodworking or almost any manufacturing business; especially adapted for truck packages, barrels, baskets, etc.; location right in heart of best trucking section. For further information address No. 1625, care Manufacturers Record.

BASKET AND BOX PLANT

FOR SALE—Plant equipped for manufacturing baskets, crates, boxes and veneers, now in operation; located in live Southern city; plenty of timber; good trade; a bargain; must sell. Address No. 1624, care Manufacturers Record, Balto., Md.

MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

FOR SALE—3000 acres, absolute title, of Pittsburgh county, Oklahoma, farm, coal, oil and gas land; \$10 per acre. Write John Cavanagh, McAlester, Okla.

TOWNSITE

FOR SALE—Alabama townsites, now scene of oil-boring activity; Semmes, Ala., on the railroad, 15 miles from Mobile; 300 acres; worth the price for townsites alone. J. L. Locke & Co., 107 Masonic Temple, Mobile, Ala.

FULLER'S EARTH AND KAOLIN

FULLER'S EARTH AND KAOLIN.—England and Germany at war; no more from there. We have deposits as good as any ever imported from these two countries. Now is your time. Southern Ins. & Realty Co., Ga. Casualty Bldg., Macon, Ga.

PHOSPHATE ROCK DEPOSIT

FOR SALE—Two million tons of blue rock phosphate in the ground near Mt. Pleasant, Tenn., running from 58 to 72 per cent. bone phosphate of lime; no potash required; simply grind the rock and apply to land; spur of the L. & N. R. runs through it. Capt. W. N. Hughes, U. S. A., 523 1/2 Broadway, Nashville, Tenn.

IRON PYRITES MINE

FOR SALE—Iron pyrites mine, located 20 miles from Atlanta, Ga., 2 miles from railroad; strictly high-grade and large vein. C. C. Houston, Lewisburg, Tennessee.

COAL AND TIMBER LANDS

FOR SALE—NEW RIVER COAL LAND. In order to settle an estate will sell 3000 acres New River land and timber at a bargain, very near C. & O. Railroad. Address Box 248, Hinton, West Virginia.

TIMBER FOR SALE

FOR SALE—Nice little pine sawmill proposition of 700,000 feet near Norfolk; 6 miles R. R. If sold soon will make sacrifice. Party with small mill can clean up from \$3000 to \$4000 in 5 to 6 months if handled properly. Parties desiring such a proposition, will pay to investigate promptly. W. A. Joyner, Branchville, Va.

FOR SALE—40,000,000 feet of good timber, with sawmill and complete outfit; very low freight rates to Gulf ports; very cheap and on easy terms. James A. Terry, Mobile, Ala.

TIMBER LAND FOR SALE

21,000 ACRES on A. C. L. Ry. and navigable river; cruisers' estimate shows 80,000,000 feet short and long leaf pine, gum, cypress, poplar, etc.; logging easy. Johnson's A. & P. Real Estate Exchange, 926 Pennsylvania Ave. N. W., Washington, D. C.

TIMBER TRACTS located for manufacturers or investors by practical timbermen. Correspondence solicited. Jo A. Parker, Parma, Mo.

5400 ACRES of virgin hardwood timbered land in East Tennessee, \$10 per acre; would exchange. Farm Realty Co., 825 Jefferson Co. Bank Bldg., Birmingham, Ala.

FARM AND TIMBER LANDS

FOR SALE—About 20,000 acres of land in fee in Eastern North Carolina, in close proximity to railroad. This land contains about 60,000,000 feet of pine and cypress timber. The land without the timber is splendid for farming. With the timber off it is worth the price asked for the whole. Timber, Box 1089, Norfolk, Va.

4000 ACRES in Lexington county, S. C.; will sell in 100 or 1000-acre tracts; healthiest section of State; will cut over 2,000,000 feet long-leaf pine; creek on property will develop over 300 horse-power. Price and terms, apply to I. D. Bardin, Columbia, S. C.

STOCK FARM

FOR SALE—Magnificent farm, situated in the bluegrass district of Deer Creek, Harford county, Md., 22 miles from Baltimore, 9 miles from Belair, on new State road between Baltimore and Conowingo, 3 miles from Susquehanna River; 211 acres; \$22,000 residence (16 rooms and bath); barn, \$8000, in splendid repair; barn 64x102 ft., 19 box stalls, 5 single stalls, 20 cow stalls, room for 30 head of cattle and 100 sheep; entire farm recently refenced. One of the profitable features of farm is a pasture of 60 acres finest bluegrass, which has not been plowed for 75 years; 75 acres in other grass; two streams through property; artesian water in house and barn; variety of fruit; a bargain. Price \$27,500 in fee. Terms to suit. Will make an ideal stock farm. Address No. 1594, care Manufacturers Record, Balto., Md.

DAIRY OR STOCK FARM

FOR SALE—On easy terms, ideal place for dairy or stock farm, within two miles of Greenwood, fastest growing town in Piedmont section; place contains 190 acres, good two-story house, barn, three tenant-houses, magnificent pasture; fine road to town. Can make very easy terms to good purchaser. Address P. O. Box 468, Greenwood, S. C.

FRUIT, FARM AND TRUCK LANDS

ALABAMA

ALABAMA FARM LAND.—Get in touch with us. We sell farm land anywhere in Alabama. Stewart with James Bailey & Co., No. 221 North 21st St., Birmingham, Ala.

IRVINGTON, ALABAMA.—"The center of the famous Satsuma orange belt." Oranges are now beginning to ripen, and by Oct. 15 the orchards will be one mass of gold and green. Plan your Southern trip at this time and investigate for yourself the wonderful possibilities of this new industry. The finest farm and orchard lands for sale. For particulars address Irvington Realty Company, Irvington, Alabama.

ARKANSAS

FINE FRUIT FARM FOR SALE.—90 acres in bearing trees, 30 acres pasture. In the Ozark country, Springdale, Arkansas; 2000 feet elevation; no malaria; finest apple and peach orchards surrounding; good railroad facilities and markets. Price \$25,000, cash or terms. If mean business, write for details. C. O. Chipman, P. O. Box 504, Pueblo, Col.

FLORIDA

THE PALATKA FARMS COMPANY of Palatka, Florida, offers to homesteaders the very superior advantages of splendid soil, adapted to potatoes, corn and trucking, or for oranges and grapefruit, or for combination of both, with location unsurpassed, lying along the beautiful St. Johns River, 2 miles of Palatka, an up-to-date city of 8000 population. It boasts of electric-light and gas plants, four railroads and cheap river transportation. Write for literature. P. J. Beck, Palatka, Fla.

139 ACRES of best farm lands; 80 under cultivation; two good dwelling-houses; on national highway; on switch of Seaboard Railway; convenient for shipping; all kinds of farming products; four miles west of Live Oak; bargain for cash. Consult R. A. Jones, R. F. D. No. 6, Live Oak, Fla.

THREE MONTHS FREE.—Subscription to the Indian River Farmer. For truckers, fruit growers, general farmers, and folks who want to know about Florida. Address Indian River Farmer, Dept. "V-1," Bero, Fla.

FOR SALE—Ideal citrus land, 40-acre tract and up; in the proven district; high and healthy. Special inducements to parties of four or more. J. D. Clark, Bartow, Fla.

FOR SALE—50,000 acres in St. Lucie county, Florida; 20,000 acres in Manatee county; 30,000 acres in Lake county; 6240 acres in Polk county; all well located; excellent colonization tracts. Address P. F. Quinn, Vinton, Iowa.

J. H. BRINSON,
Real Estate and Investment
BROKER,
Ocala, Florida.

MARYLAND

126-ACRE fertile stock, dairy, truck farm; 10 miles out on Baltimore boulevard; 1/2 mile trolley; mile steam station; elegant buildings for high-class farming; 10 acres grapes; 350 fruit trees; 50 acres in timothy and 60 acres fertile bottom; owner made \$7500 from crops in 1913; boulevard part worth \$400 acre; 40 minutes run to Washington; close to U. S. Government and State farms; \$17,500; half cash. Geo. C. Walker, Kenos Rldg., Washington, D. C.

FOR SALE—Beautiful farm of fifty acres in Southern Maryland, located in village, with every convenience; fine new dwelling; all necessary outbuildings; cannot care for property. Price \$7000. Owner, J. Clarence Raley, St. Inigoes, Md.

NORTH CAROLINA

SEE OR WRITE ME your wants about all kinds of real estate. The nicest of farm lands, also nice town property in the famous summer and winter resort, "Chimney Rock," where thousands of people go. Come and see the most attractive place in the United States, and then you will buy a home. J. L. Elliott, your dealer, Rutherfordton, N. C.

OKLAHOMA

EXTRA FINE FARM CHEAP.—A bargain; no buncombe; fine investment; grows corn, wheat, alfalfa; good schools, market, neighborhood, water, oil prospect. It is a dandy. Ask about it. W. P. Poland, Ardmore, Okla.

SOUTH CAROLINA

FOR SALE AT GREAT BARGAIN—1000 acres land, subdivided into small farms, situated at small town in Chesterfield county, S. C., on S. A. L. main line, 70 miles from Columbia, S. C., and 40 miles from Camden, the famous winter resort for Northern tourists. National Automobile Highway from Washington, D. C., to Jacksonville, Fla., traverses the place. Every acre available for farming purposes. Over 500 feet above sea level. Climate and health unsurpassed. Soil rich sandy loam, ideal for truck, poultry, orchards and live stock. Churches and schools convenient. Present price will enable purchaser to more than double outlay in few years. Write for details. Owner, 2210 Lee St., Columbia, S. C.

TENNESSEE

SPLENDID OPPORTUNITY, LINCOLN COUNTY, TENNESSEE. 295 acres good unimproved land; all can be cultivated; no rock or steep hill land; some good timber; fine freestone water, and the healthiest place to live in the State. Located near railroad, schools and churches. Price \$10 per acre. For further information address W. C. Thomson, Fayetteville, Tenn.

TEXAS

FOR SALE—8000 acres, including townsite on railroad, Gulf Coast country, Southwest Texas; suitable for truck growing or general farming; abundance pure, fresh water from shallow-depth wells; producing oil wells 7 miles east, producing gas wells 2 miles west, from wells 350 to 500 feet deep; price for quick sale, \$15 per acre; easy. J. F. Hyatt, Sweden, Duval county, Texas.

VIRGINIA

FOR SALE—164 acres fine bluegrass farm in Southwest Virginia; three dwellings, orchard, springs and running water; three miles of town; good roads. \$16,400. S. H. Preston Agency, Inc., Abingdon, Va.

BUY a good Virginia farm near Washington, D. C., where good markets take all dairy truck and poultry products. James A. Bethune, No. 3 The Westover, Washington, D. C.

MACHINERY AND SUPPLIES

CHANGING EQUIPMENT, WILL SELL EXCELLENT MACHINES CHEAP. Tumbling barrels, \$10, \$15, \$20, \$25; alligator shears, \$20 up; 16" shearing press, \$100; emery grinders, \$2 up; power presses, \$15 up; 30 H. P. vertical boiler, \$140; 21" drill press, \$30; lathes, \$10, \$25, \$50 up; large power grinders, \$20; bolt headers, \$100 up; bolt threaders, \$30 up; nut tapper, \$15 up; small rolling mills, \$100; planers, \$100, \$200; shapers, \$100; milling machines, \$50; shafting, hangers, pulleys, etc. B. B. Shelton Company, Shelton, Conn.

TRANSIT WANTED

WANT TO BUY second-hand light mountain transit of good make; must be in good condition. Address W. E. Ward, Pine Apple, Ala.

PATENTS AND INVENTIONS

INVENTIONS developed by practical manufacturers. We have designed and manufactured the simplest and most complicated devices. References furnished. Russell Machine Co., Live Oak St., Dallas, Texas.

PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER AND PATENT ATTORNEY, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my especial qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

PATENT YOUR IDEAS.—\$5000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 578 F St., Washington, D. C.

PATENTS THAT PROTECT AND PAY. Advice and books free. Highest references. Best results. Promptness assured. Send sketch or model for free search of Patent Office records. Trade-marks registered. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

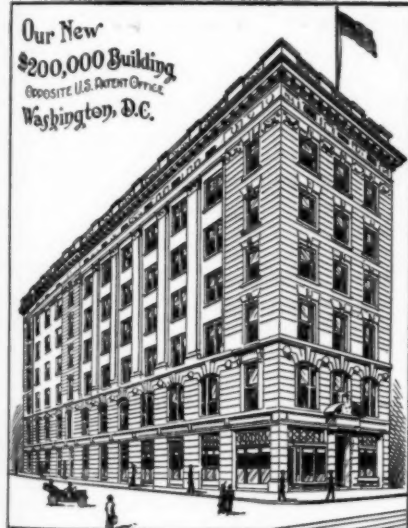
VALUABLE INVENTIONS justify only best legal service. Consult Vernon E. Hodges, Attorney-at-Law, Barrister Bldg., Washington, D. C. Practice before the U. S. Supreme Court; all Circuit Courts; Courts of the District of Columbia, and the U. S. and Foreign Patent Offices exclusively. Continuous practice since 1886. Extensive experience with all classes of invention, representing lawyers, manufacturers and inventors in every State.

PATENT YOUR INVENTION.—Send sketch for free expert search and report as to patentability. Books on inventions and patents, and book of references from congressmen, manufacturers, bankers and inventors, sent free. John S. Duffie & Co., Patent Attys., 620 F St. N. W., Wash., D. C.

PATENTS.—Herbert Jenner, patent atty. and mechanical expert, 606 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

PATENTS THAT PROTECT.—Careful, honest work in every case. Patent your ideas; they may bring you wealth. 64-page book free. FitzGerald & Co., 817 F street, Washington, D. C. Established 1878. Send for our book.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for one invention; \$16,000 for others. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.



Our New \$200,000 Building
Opposite U.S. Patent Office
Washington, D.C.

James B. Conde, revolver flashlight.
Henry C. Berryman, shirt.
Charles H. Canfield, acetylene gas machine.
Oscar Chaffey, excelsior machine.
Wm. E. Gilmore, automobile.
Benjamin D. Lake and Nathaniel G. Marks, motor-vehicle headlight.
Daniel B. Lovejoy, cotton harvester.
Geo. D. Long and Eugene Rapp, soldering alloys.
George C. Helm, ash sifter.
Edmund Herold, automobile clock.
Peter F. Hellerstedt, auxiliary spring.
Thomas H. Menchion, crate.
William Minnick, vehicle wheel.
Dr. Benjamin H. Cook, coupling device.
Wm. L. Dillon, fence clamp.
Daniel T. Seale, wagon gear.
Joseph Daniel, hat frame.
L. Victor Pines, nut lock.
Whadyslaw Poniatowski, driving gearing.
Louis D. Merrill, knock-down box.
Francis J. Reynolds, shoe buttoner.
John B. Pearson, window.
Hugh D. Peaslee, carburetor.
Everett H. Newcomb, garment taping machine.
Paul W. Thomas, door hanger.
Daniel E. Williamson, poison bottle.
Bertrand O. Walker, engine.
Martin Mulloy, catch-basin for sewers.
Charles H. Texter, milk bottle.
Henry W. Wallace, adjustable cross-cut saw.
John Watkins, sickle-bar holder.
Henry F. Sottong, horseshoe.

Charles Klinghammer, potato digger.
Catherine C. Kane, dustpan.
Henry D. Pate, horse collar.
Martin Evenson, window frame.
Philip I. Saunders, clothes drier.
Jude N. Shows and Clyde B. Tucker, non-refillable bottle.
Leonard R. Steel, bottle receptacles.
Leonard R. Steel, carrier for receptacle.
Valdemar Thestrup, ticket punch.
James M. Briles, soil pulverizer.
A. M. Bollinger, toy.
Norman Oestreich, cheese hoop follower.
Robert C. Morrow, rail chair.
Everett D. Moreton, tractor.
Alonso H. Mitchell, plaster.
George H. Huff, scraper attachment for wheel plows.
Frank S. James, rod extractor.
Emil E. Koltke, ship's brake.
Joseph C. Kriha, adjustable fork socket.
Richard G. Whitehead, water heater for gas range.
Roy E. Patrick, high chair.
Charles W. Renner, waste guard for journal box.
Daniel P. T. Douglass, floor scraper.
Ephraim J. Davies, coal pick sharpener.
Wm. L. Daly, tag hook.
Crawford L. Easterling, plow stock.
Homer E. Giddings, rail joint.
Wyatt S. Halliday, vacuum washer.
Arch Moon, vehicle wheel.
Wm. V. Turner, chair.
Walter V. Kamp, alrship.
Wm. J. Cassady, spirit level.
Mrs. Ora M. Boorman, holder.

Wm. H. Boyd, rail controller.
Walter R. Clayton and David H. Jones, pulley remover and replacer.
Carl Berg, rail tie.
Isaac Bird, vehicle wheel.
Fred Heinemann, mold.
Irving J. Burd, dining-table attachment.
Second M. Hampton, cable guide.
Wm. F. Alderman, trap.
John F. and Jay F. Bullard, bean sheller.
Serena N. Ayres, ignition device.
Wylie Ashworth, oil can.
Horace S. Barnwell, clutch operating mechanism.
Wm. F. Purcell, automatic train-stopping apparatus.
Luther Profit, steam engine reversing.
W. W. McElrath, rails.
Geo. A. Prall, scuttle ladders.
Chas. F. Lambke, internal combustion engine.
Wm. R. Pike, thimbles.
Sherly B. Lyon, cultivators.
Mrs. E. Lynch, screens.
A. D. Plowder, band saws.
Claude R. Kiefer, bicycles.
Wm. E. Munslow, railway ties.
J. G. Lenhart, supporting racks.
W. W. Lemmon, farm tractors.
Peter Molstad, furnace cleaners.
John W. Rise, berry boxes.
Ole Sandberg, combination shovels and hoes.
C. W. Whitman, clothes pounders.
Emil R. Young, mechanical toys.
Carl Schevitz, spring wheels.

Wm. J. Wallace, shock absorbers.
Jas. T. Terry, ore-pulp classifiers.
John A. Anthony, brake-operating devices.
James Dalton, hand-operated drills.
H. J. Irvine, rack and pinion devices.
A. D. Laurent, tires.
Fulmer & Nebinger, bottle closures.
R. G. Harris, miners' lamps.
H. F. Gale, telegraph transmitters.
Paul C. Brenner, ash sifters.
Robert Brown, electric dispatch systems.
Alexander Chamblay, vault light construction.
Ernesto Fuchs, design for a powder box or can.
Wm. E. Gorton, design for a pump casing.
C. Sikorski, design for an escutcheon plate.
Albert D. Anderson, seed-dropping mechanism.
A. L. Ellis, air-compressing machines.
Frank H. Flower, canoe barrows.
M. M. Baird, furnaces.
Wm. A. Hand, design for a lemon squeezer.
Wm. Van Buskirk and J. A. Cooper, water gauge.
E. E. Stacy, implements for opening boxes.
Henry M. Silveira, cuspidors.
Lloyd Revelle, envelope.
John J. Wartman, plumb stocks.
O. H. Mackey, ties.
O. H. Mackey, metallic railroad ties.
Charles Brown, headlights.
Chas. H. Reuter, pump jacks.
G. A. Niewiadowski, bathtub silencers.
James Harry McKay, chimneys.
Chas. E. Jones, headlights for automobiles.

PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS

BOND OFFERINGS

For Sale—\$475,000 6% Tax Bonds

Sealed proposals will be received by Ward County Irrigation District Number One, Barstow, Texas, to be opened and considered October 13, 1914, 10 A. M., for bonds in the sum of \$475,000, six per cent. serial issue, interest payable in New York November 8 and May 8. Certified check for \$1000 to accompany bid. Full details on request.

WARD COUNTY IRRIGATION DISTRICT NO. 1, Barstow, Texas.

Bonds For Sale

Bids will be received by the County Commissioners of Warren County until Monday, October 5, 1914, at 12 o'clock M., for the purchase of \$20,000 of Nutbush township road bonds. These bonds will be in denomination \$1000 and will run for 40 years. Rate interest 6 per cent., payable semi-annually at County Treasurer's office, located at the Courthouse in the town of Warrenton, N. C. No bids will be considered unless accompanied by certified check \$200, payable to Chairman, Board of Commissioners. The Commissioners reserve the right to reject any and all bids. For further information address

P. M. STALLINGS, Chairman,
Macon, N. C.

Sale of Road and Bridge Bonds

Notice is hereby given that the Board of County Commissioners of the County of DeSoto, Florida, will receive sealed bids at the office of the Clerk of the Circuit Court, Arcadia, Florida, until 2 o'clock P. M. on the 6th day of October, A. D. 1914, for the purchase of bonds of Special Road and Bridge District No. 5, authorized and issued by the said Board of County Commissioners for the said Special Road and Bridge District No. 5 in the sum of three hundred and fifty thousand dollars.

The entire bond issue of three hundred and fifty thousand dollars, coupon form, is hereby offered for sale; the same are issued in denominations of five hundred dollars, each bearing date of the first day of October, A. D. 1914, maturing thirty years after date, bearing coupon form interest at the rate of six per cent. per annum, interest payable semi-annually, and interest and principal payable at Arcadia, DeSoto county, Florida.

The said Board of County Commissioners reserves the right to sell the whole or any part of the said bond issue and also to reject any and all bids.

Each bidder is required to furnish certified check for 2 per cent. of his bid as evidence of good faith. The said checks of unsuccessful bidders will be returned, and the checks of the successful bidder will be forfeited in case he fails to comply with his bid. Each bidder will state the time when he will comply with his bid by paying money or other evidences thereof.

A. L. DURRANCE,
Clerk of Circuit Court.

Notice—Bond Sale

Jackson, Tenn.

Notice is hereby given that sealed bids will be received by the municipality, City of Jackson, Tennessee, on or before October 6, 1914, noon, for the purchase of all or any part of the following bonds to be issued by said City, to wit:

General Improvement Bonds, Series No. 1.....	\$6,306 00
To bear date October 1, 1914, and mature October 1, 1919.	
General Improvement Bonds, Series No. 2.....	\$6,295 00
To bear date October 1, 1914, and mature October 1, 1924.	
Street Improvement Bonds, Series Nos. 4, 5, 9, 10, 11, 12 and 23.....	\$12,585 00
To bear date October 1, 1914, and mature in installments one, two, three, four and five years after date.	
Street Improvement Bonds, Series Nos. 2 and 3.....	\$12,610 00
To bear date October 1, 1914, and mature in installments one, two, three, four and five years after date.	

All of said bonds to draw interest at the rate of 6 per cent. per annum, payable semi-annually, and evidenced by coupons in the usual form.

Bids will be received on said bonds as a whole or any number less than the whole, and such bid or bids will be accepted which seems the most favorable and will net the City the largest sum, but no bid for less than the par value of any such bonds will be considered, and the right is reserved to reject any and all bids.

All bids shall be filed with the City Recorder on or before noon of October 6, 1914, and all bids must be accompanied by a deposit or certified check for at least ten per cent. (10%) of the amount of the bid as an evidence of good faith and as a guaranty that such bidder will comply with the terms of purchase if such bid is accepted; all deposits and certified checks of unsuccessful bidders to be returned.

This September 24, 1914.

C. E. GRIFFIN,
Mayor.
F. E. HOWARD,
City Recorder.

PROPOSAL ADVERTISING INFORMATION

RATE: 20 cents per line per insertion.

PUBLICATION DAY: Thursday.

FORMS CLOSE 9 A. M. Wednesday Copy received later cannot be published until issue of following week.

NIGHT LETTER: When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

\$500,000 6% Bonds

NOTICE OF BIDS AND DISPOSITION OF BONDS IN ACCORDANCE WITH SECTION 732 OF GENERAL STATUTES OF FLORIDA.

The Board of County Commissioners of Lake County, Florida, will receive bids for the purchase of \$500,000 of Lake County, Florida, six (6) per cent. bonds, bearing interest coupons, at the Clerk's office in the Court House at Tavares, Lake County, Florida, at or before 12 o'clock noon of Saturday the 17th day of October, A. D. 1914.

The principal of said bonds shall be due and payable as follows:

\$100,000 on the 1st day of January, 1929;
\$100,000 on the 1st day of January, 1934;
\$100,000 on the 1st day of January, 1939;
\$200,000 on the 1st day of January, 1944.

Said bonds dated January 1, 1914, and shall bear interest from July 1, 1914; interest on said bonds shall be due and payable on the first day of January and June in each year.

Bidders will include in bid that interest will be paid by bidder from July 1, 1914, to date of delivery of bonds, and state amount and date of maturity of bonds bid for.

Bonds to be delivered to purchaser as money is needed to carry out contract or contracts predicated upon the issue of said bonds.

Any and all bids may be rejected if the County Commissioners deem it to the interest of the County so to do.

The County Commissioners require of all bidders for said bonds that they give security by bond in the sum of five per cent. of the amount bid running to the County Treasurer, with sureties, that the bidder will comply with the terms of his bid. Certified checks will not be accepted in lieu of bonds. Endorse all bids, "Bid for Lake County Road Bonds," and address same to Board of County Commissioners of Lake County, care of H. H. Duncan, Clerk, Tavares, Florida. For further information address the undersigned.

H. H. DUNCAN,
Clerk Board of County Commissioners
Lake County, Florida.
September 18, 1914.

PAVING AND GOOD ROADS

Paving

Petersburg, Va.

Sealed proposals, addressed to J. R. Jones, Chairman of Street Committee, and plainly marked "Paving Bid," will be received until October 15, 1914, at noon, on the construction of 13,000 square yards, more or less, of creosoted wood-block roadway paving on East Bank and Halifax streets, Petersburg, Virginia.

Specifications upon application to R. D. Budd, City Engineer. Each bid must be accompanied by a certified check in the sum of \$500, payable to F. G. Stratton, City Treasurer, as evidence of good faith. The Street Committee and the City Council reserve the right to reject any or all bids.

P. G. BUNTING, Clerk.

Notice to Sidewalk Paving Contractors

Sealed proposals, addressed to the Mayor and City Council, Lancaster, S. C., will be received until 3 o'clock P. M. October 14, 1914, for furnishing all material, equipment and labor for the following work:

Approximately 10,000 square yards of cement sidewalk pavements, complete, in Lancaster, S. C.

All work will be paid for in cash.

Each bid to be accompanied by a certified check for five hundred dollars, made payable to the Mayor, Lancaster, S. C.

The right is reserved to reject any and all bids.

Specifications may be obtained by writing the Engineers at P. O. Box 582, Savannah, Georgia.

J. M. HOOD, Mayor.

JOHN CLAWFORD, Clerk.

H. S. JAUDON ENGINEERING CO.,
Consulting Engineers,
Savannah, Georgia.

BRIDGES

Concrete Bridges

Fayetteville, N. C.

The Commissioners of Cumberland County will receive bids till 12 o'clock noon Monday, October 12, 1914, for the construction of concrete bridges in different parts of the county of Cumberland, to cost not less than \$25,000 nor more than \$30,000.

Rights reserved to reject any and all bids. Bidders to furnish own plans and specifications.

By order of the Board, September 8, 1914.

FULTON R. HALL,
Clerk to Board.

Lift Bridge

New Orleans, La., September 23, 1914.

Pursuant to Ordinances Nos. 1691 and 1802, C. C. S., sealed proposals will be received at this office until the hour of 11 o'clock A. M. Monday, October 26, 1914, for erecting a Strauss Trunnion Bascule Lift Bridge over the New Basin Canal on the axis of City Park Avenue, in accordance with plans and specifications on file in the office of the City Engineer. Deposit \$1000 with the City Treasurer, and his receipt or certified check enclosed with the bid. Bond 25 per cent. of the contract price. The City Engineer will furnish bidders with a blank form of proposal. No proposal will be considered unless submitted on such form. Bidders must have paid their city license in order that their bids may be accepted.

The city reserves the right to reject any and all bids.

A. G. RICKS,
Commissioner.

Eighteen Bridges

NOTICE TO CONTRACTORS.

Newton, Miss.

The Board of Supervisors of Newton County, Mississippi, will on Monday, the 5th day of October, 1914, let the contract for building eighteen bridges in District Number Four of Newton county, over streams on the roads known as the Newton-Lawrence and Roberts road, Tanglewood Extension, Lake-Hazel, and Newton and Garlandville road. The total length of all of said bridges being 1600 feet, more or less. To be constructed of A-1 creosoted timbers, in accordance with the plans and specifications now on file in the office of the Clerk of the Board of Supervisors of said county. Sealed bids will be received by the Clerk of said Board at Decatur, Mississippi, until noon the 5th day of October, 1914. All bids must be accompanied by an unconditional certified or cashier's check on some Mississippi bank, payable to the President of the Board of Supervisors of said county, in the sum of \$1000. The contract for the building of said bridges will be awarded to the lowest bidder, who will enter into contract to perform said work and enter into bond in a sum equal to the amount of his bid, said bond to be approved by the President of said Board. But the Board reserves right to reject any or all bids. All of said bridges to be completed within sixty days from date of contract.

This the 9th day of September, 1914.

C. M. WELLS,
Clerk of Board of Supervisors.

MISCELLANEOUS

Roller Shelves

Sealed bids will be received and opened by County Commissioners at 2 P. M. October 6, 1914, for Roller Shelves to fit wall 10 1/2 feet high by 13 1/2 feet wide, books 13x18 1/2 inches. Space between rollers 3 1/2 inches, except one tier floor to ceiling, 2-inch space between rollers.

Also, one separate tier Roller Shelves for books 20x29 inches, between rollers 2 1/2 in., about 15 books.

Describe base, top and finish.
For further information address
J. E. FULTZ, Clerk,
Fort Pierce, Fla.

Reinforced Concrete Retaining Wall

Bradentown, Florida.

Sealed bids will be received by the undersigned until 7 o'clock P. M. October 12, 1914, for 700 linear feet of reinforced concrete retaining wall, containing approximately 333 cubic yards; filling in behind walls, about 700 cubic yards; furnishing and driving 87 piles, and furnishing and placing 1400 linear feet of hand rail.

Plans and specifications will be furnished upon application and cash payment of \$1 to cover cost of same.

PHIL LACEY,
Commissioner of Public Works.

Water-Works and Sewer System

Sealed proposals for the construction of a water-works and sewer system for the town of Camp Hill, Alabama, will be received until noon October 15, 1914.

The water-works plant will consist of power-house; one 750-gallon-capacity motor-driven centrifugal pump; one 500-gallon-capacity triplex, duplex or centrifugal pump, direct connected or belted to a 25 H. P. gas or oil engine; one 80,000-gallon-capacity steel tank supported on steel tower; 2500 feet of 8-inch and 8000 feet of 6-inch cast-iron pipe; 36 double-nozzle fire hydrants; gate valves, etc.

The sewer system will consist of 13,500 feet of 8-inch, 4200 feet of 10-inch, 900 feet of 12-inch terra-cotta pipe sewer, 52 manholes, and 20 lamp holes.

Plans and specifications may be seen at the office of the Mayor, W. C. Newell, Camp Hill, Alabama, or at the office of the engineer, Edgar B. Kay, Tuscaloosa, Alabama, from whom bidding-sheets and specifications can be had on application.

The Town of Camp Hill, Alabama, reserves the right to reject any or all bids.

W. C. NEWELL, Mayor,
Camp Hill, Ala.
EDGAR B. KAY, Engineer,
Tuscaloosa, Ala.

Pumping Plant and Concrete Sluiceway

Sealed bids will be received until 1 o'clock P. M. October 24, 1914, by the Board of Supervisors of the Elsberry Drainage District at the office of James C. Welch, Secretary, Elsberry, Missouri, for a steam-driven pumping plant, complete, containing two 48-inch centrifugal pumps, each of which will have a normal capacity of 59,000 gallons per minute and a maximum capacity of 74,000 gallons per minute against a maximum static head of 14 feet.

Bids will also be received at the same time and place for a reinforced concrete sluiceway.

For further information address Harman Engineering Co., Peoria, Illinois.

Court House

NOTICE TO CONTRACTORS.

West Palm Beach, Fla.

Sealed bids will be received by the Board of County Commissioners of Palm Beach County, Florida, at the Clerk's office at West Palm Beach, Florida, up to 12 o'clock noon of October 6, 1914, for furnishing all material and labor for the construction of a courthouse at West Palm Beach, Florida, as per plans and specifications on file in the office of the Architect, W. B. Talley, 315 St. James Building, Jacksonville, Florida.

Copies of plans and specifications may be obtained from the office of the Architect upon a deposit with him of \$25, the amount of deposit to be returned to contractor when plans are returned to the architect in an undamaged condition, after contractor shall have made a bona-fide bid on the work.

Each bidder shall deposit with his bid a certified check made payable to the order of the Board of County Commissioners of Palm Beach County for two per cent. of the amount of his bid, as a guarantee that the bidder, if awarded the contract, will enter into contract for the construction of said building, and the completion of his contract, according to the plans and specifications prepared therefor, and give satisfactory bond for the amount named in the specifications.

Bidders are required to state the time necessary for completing the contract. The Board reserves the right to reject any or all bids.

By order of the Board of County Commissioners.

[Seal
Co. Comm.] R. H. ROUSSEAU,
Chairman.
Attest—
GEO. O. BUTLER, Clerk.

Road Roller

Brooksville, Fla.

The Board of County Commissioners of Hernando county, Florida, will on or before Monday, October 5, 1914, receive sealed bids for the purchase of one ten-ton oil-burner Steam Road Roller.

H. D. EVANS,
Chairman Board of County Commissioners.
M. H. SNOW,
Clerk Board of County Commissioners.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Removal of Buffalo Office.

The Asbestos Protected Metal Co. of Beaver Falls, Pa., announce the removal of its Buffalo (N. Y.) office to 918 Mutual Life Bldg., with H. W. Littlefield as district sales manager.

Foreign Shipment of Machinery.

Notwithstanding the difficulties met in making foreign shipments, the Cincinnati Iron & Steel Co. of Cincinnati, O., maker of the "Ciseco" line of machinery, announces it has strengthened its foreign business by shipping the early part of September a large lot of all sizes of lathes to Italy.

"In Spite of the War Cry."

J. P. DeLancy of the Richmond (Va.) branch office of the Gallion Iron Works & Manufacturing Co. of Gallion, O., manufacturer of culvert pipe and road machinery, etc., writes: "In spite of the war cry we have every reason to believe we are going to do a nice business this fall." That is the

spirit with which a great many business institutions are looking forward to developing business regardless of war times. Mr. DeLancy also announces that the Richmond offices of the company have been removed from 209½ E. Main St. to 1018 Mutual Bldg.

Water-works Extension Contracts.

A contract, amounting to about \$120,000, for furnishing and laying complete approximately 20,000 feet of 16-inch and 40,000 feet of 18-inch Matheson joint steel pipe, together with valves, etc., for the water-works extension at Wellington, Kansas, has been awarded to the N. S. Sherman Machine & Iron Works of Oklahoma City, Okla.; also a contract for a 500,000-gallon tank to the Chicago Bridge & Iron Works of Chicago at \$17,690, all of which will be installed under the supervision of the Benham Engineering Co., Oklahoma City, Okla.

Into Larger Quarters.

The Electrical Supply Co. of New Orleans, having outgrown present quarters at 326-328

Camp St., has arranged to occupy the building formerly occupied by the New Orleans Picayune, a block further up on Camp St., which has been repaired and altered to meet the needs of this company. Within three years of the time it was founded, the growth of the company has been so great as to necessitate larger quarters. The officers and directors of the company are Edward Jumonville, president; Leo L. Hirsch, vice-president; Theo. Hirsch, secretary; James Jumonville, treasurer, and Lazard Levy, director.

TRADE LITERATURE.

Profitable Electrical Merchandise.

"Profitable Electrical Merchandise" is the title of a new folder which is issued by the Western Electric Co., 463 West St., New York, to assist the electrical trade in the sale of washing machines and vacuum cleaners. In the folder are shown sample advertisements illustrating and describing the new types of washing machines and vacuum cleaners with electrotypes for local newspapers, lantern slides, window displays, street-car cards, etc., and other helps to dealers in electrical apparatus.

Lackawanna Steel Co.'s Handbook.

In endeavoring to bring before consumers the utility of its various products and to give general information appertaining to the shapes and weights of material rolled from Bessemer and open-hearth steel, a handbook, containing general information for the use of engineers, architects and builders, has

been issued by the Lackawanna Steel Co. of Buffalo, N. Y. The book contains diagrams, tables of dimensions and weights of structural steel sections, special shapes, merchant bars, steel sheet piling, standard heavy and light rails, track accessories, etc., manufactured by the Lackawanna Company. Information as required by engineers and architects in the use of the company's products, beginning with properties of rolled sections and followed by the dimensions, properties and safe loads of steel columns and struts, girders and beams, has been arranged in tabular form. The price of this handbook is \$2.

Durability of Lake Asphalt Pavements.

Several million yards of Trinidad and Bermudez sheet asphalt pavements that have given a service of 20 years or more are illustrated and described in a booklet entitled "Evidence," recently issued by the Barber Asphalt Paving Co. of Philadelphia, Pa. A score of cities are represented, and wherever maintenance data was obtainable it has been given, along with the date the pavement was laid and a photograph showing its present condition. The oldest of the pavements so described is the Trinidad sheet asphalt pavement on Vermont avenue, Washington, D. C. It is 35 years old. The company states that more than 1,000,000 square yards of asphalt paving in Washington, averaging 23 years of age, has cost 1.8 cents per yard per year for maintenance. New Orleans has several 30-year-old pavements, and Buffalo has 1,200,000 yards of sheet asphalt 20 years of age or more, and still in use.

Special Advertisements of General Interest.

ABATTOIR FOR SALE

New Modern Tile and Stone Abattoir. Machinery electric driven, R. R. siding, water, sewer, paved street, stock scales. Doing \$150,000 worth of business last year. This plant has and will pay for itself in a few years. The reason for selling is poor health. Would consider good income property as part payment. Address

M. J. ROHM, Connellville, Pa.

Factory for Sale

Situated in the center of Plainfield, N. J., three minutes from the Central Railroad of New Jersey Station; trains half-hourly to New York.

Consists of brick, steel frame and a few wood frame buildings, having a total floor space of 15,000 sq. ft., together with two-story office building. Brick power plant in fine condition supplies entire factory. Copious supply of water from well in powerhouse. Includes space suitable for blacksmith shop, grinding room and general factory work, together with room for storage of supplies. Made vacant owing to necessity of securing larger space. Ready for immediate tenancy.

Apply SPICER MFG. CO., Plainfield, N. J.
Or Your Own Broker.

ICE PLANT FOR SALE

60-ton Ice Plant for sale; good condition; lot 100x250, close in. In one of the best cities in Texas; population 90,000. Plant has made net profit of over \$10,000 for several years. Would make \$20,000 if changed to raw water system, Diesel Engine Drive. Price \$50,000; \$10,000 cash, balance easy payments.

O. J. MORRIS, Houston, Texas

USED MOTOR CARS AND TRUCKS

ASK FOR LATEST LIST TODAY
MAR-DEL MOBILE CO.
BALTIMORE, MD.
REFERENCES-BRADSTREET OR DUN.

Telegraph, Trolley and Telephone

POLES and POSTS

Mountain grown, the strongest and most lasting. Also Yellow Locust Posts, the best of all. Ties and sawed lumber.

Write

The Albemarle Orchard Company
CHARLOTTEVILLE, VA.

Natural Gas Four Cents

for Industries at

HENRIETTA, TEXAS

Domestic Gas 20 cents. Three Railroads. Water, Low Taxes, Healthful. Write
HENRIETTA BOOSTER CLUB

THE FACTORY OF THE Oriental Pine Oil Works

FOR SALE

ORIENTAL, N. C.

Grease Extraction Plant at Blue Island, Ill.

FOR SALE

HAFLEIGH & COMPANY
Philadelphia, Pa.

HIGH GRADE

Manganese Ore Available in U. S. Within a Few Months

from large undeveloped deposits in Cuba. Two miles from tidewater. No transportation difficulties. Thousands of tons on surface. Royalty or cash. Option for investigation. H. S. Turner, 3d and T Sts. N. E., Washington, D. C.

THE CONTROLLING INTEREST

OLD ESTABLISHED BUSINESS FOR SALE

THE COMMON STOCK EARNED 50% IN 1913

Orders now on the books indicate a better business for 1914.

Owing to ill-health and reluctantly acting upon the urgent advice of his physician, a client has instructed me to offer for immediate sale the controlling interest in a

\$400,000.00

TEXTILE and GARMENT MFG. CORPORATION

This is the largest, most important and best-known concern in this line in the United States. Organized in 1900 with a capital of only \$5000, it has grown to its present proportions of \$400,000 entirely out of earnings, besides paying very large cash dividends to its stockholders.

It has the most perfectly efficient organization in this country. The factory manager, sales manager, and heads of departments are all stockholders who have grown up in the business. They have made the past great success possible and are well equipped to make the future even better, so that the purchasers of this stock can step into a well-managed and very profitable business. This is a rare and unusual opportunity for a man to start his son in a very interesting, clean and profitable industry.

This business has just been appraised and the books audited by one of the best-known public appraisal and auditing companies. This report is open to inspection. The company has always enjoyed the highest commercial rating, and the highest bank and commercial references will be supplied upon request.

Full details upon request. Correspondence solicited and inspection of the plant invited.

T. S. SPRAGUE, Investment Securities,
1802 Ford Building, Detroit, Michigan.

Lighting Equipment

One year ago there were purchased from the Adams-Bagnall Electric Company a number of Regenerative Flame Arc Lamps for 110-VOLT 60-CYCLE MULTIPLE service, each complete with a clear inner and opalescent outer globe.

These lamps have burned less than 50 hours each and are guaranteed to be in A-1 operating condition; the original set of long-hour burning carbons are still in the lamps only partially consumed.

Due to a change in the service to 25 cycle, these lamps, which are worth \$40.00, can be bought either singly or collectively for \$10.00 EACH
F. O. B. CARS DESTINATION.

Alexander F. Jones, 108 East Onondaga St., Syracuse, N. Y.

Your chance to open up a new market for your goods in

SOUTH AMERICA

If interested, write at once to

FRIEDR. W. LUTZ RICHMOND, VA.
Personal Representatives in Brazil and the Argentine Republic.

Bargains in Machinery and Supplies.

AT A BARGAIN

- 3 Lidgerwood Hoisting Engines, cylinders 8 1/2 x 10, D. D., D. C., first-class condition.
- 1 Wetherall Twin Corliss Engine cylinders 20 x 42, first-class condition.
- 2 5" Worthington Turbine Pumps, D. C. to 85 H. P. motors.

Plants Bought and Dismantled

BOSTON IRON & METAL CO.
Pratt St., BALTIMORE, MD.

We Have a Large Stock of
**Exceptionally Good
Used Machinery**
LATHES
DRILLS
PLANERS
SHAPER
GRINDERS
Send for Complete List
PRENTISS TOOL & SUPPLY CO.
NEW YORK

Immediate Shipment

- 2 175 K. W. Westinghouse 3-phase 60 cycles 2300-volt 900 R. P. M. revolving field A. C. Generators.
- 1 160 K. W. General Electric 250-volt Generator, direct connected to McEwen engine.
- 1 100 K. W. General Electric 250-volt Generator, direct connected to Harrisburg engine.
- 1 135 H. P. Foss Vertical 3-cyl. Gas Engine.
- 1 35 H. P. Westinghouse Vert. 2-cyl. Gas Engine.
- Motors, all sizes, direct and alternating current.

WRITE US FOR OUR LATEST LIST.
THE ASSETS PURCHASING CO.
WHEELING, W. VA.

Special Bargains in Sanders

- 1 42" 3-drum Perfection Sander, thoroughly overhauled.....\$350.00
- 1 48" 3-drum Thomas Sander.....\$400.00
- 1 48" 3-drum H. B. Smith Sander.....\$500.00
- 1 48" 3-drum Royal Invincible Sander, used only 3 weeks.....\$550.00
- 1 54" 3-drum J. A. Fay & Co., fine order.....\$500.00
- 1 60" 3-drum Columbia Sander in A-1 condition.....\$600.00

JOINTERS

- 1 20" Carrey Hand Jointer.....\$100.00
- 1 30" Buss Extra Heavy Hand Jointer.....\$125.00
- Woodworking machinery of all kinds. Write, stating your requirements.

CLEVELAND BELTING & MACH'RY CO.
1922 Scranton Road Cleveland, O.

Bargains in Rebuilt Boilers, Engines, Locomotives, Etc.

1 25 H. P. Redditt Fire Box Boiler, price \$200.

1 each 40, 60 and 80 H. P. Redditt Fire Box Boilers, with fittings, at a bargain.

1 each 60, 80 and 100 H. P. Horizontal Tubular Boilers.

1 each 6, 8 and 10 H. P. Vertical Boilers, complete.

2 16 H. P. Hoisting Engines, double drums, with boilers.

1 25 H. P. Hoisting Engine, single drum.

1 50 H. P. Gas Engine (used four months).

1 10" dia. Mine Ventilating Fan, with engine.

1 10-ton "Baldwin" Saddle Tank Locomotive, 44" gauge.

1 30-ton "Climax" Geared Logging Locomotive, 3" gauge.

1 each 6, 8 and 10" Electric Mine Ventilating Fans (Thayer Pat.).

The above must be sold without reference to cost. Write us.

SOUTH SIDE FOUNDRY & MACH. WORKS
Charleston, West Virginia

FOR SALE

One 60 H. P. High-Speed Automatic American-Ball Engine in first-class shape. Also, one 60 H. P. Stationary Tubular Boiler, one Feed-Water Heater, and one Boiler Feed Pump, with all connections and fittings.

CHATTANOOGA SAW WORKS
Chattanooga, Tenn.

REFRIGERATING MACHINE

One 25-ton Refrigerating Vilter Steam-Driven, Corliss Engine Atmospheric Condenser, ammonia receiver, oil trap, gauge board, etc.; like new. Price \$1050 f. o. b. cars Pittsburgh, Pa.

CITY ENGINEERING CO.

619 Ferguson Bldg., Pittsburgh, Pa.

Electrical Apparatus

Bought, Sold, Exchanged, Rented and Repaired

Large stock of motors and small generators. Write for our A. C. motor price list. Get our repair and rental prices. Send us a list of the equipment you have for sale.

V. M. NUSSBAUM & CO. Fort Wayne, Ind.

BOILERS and ENGINES
Engine, Porter-Allen, 14 1/2" x 24"; Buckeye, 14 1/2" x 24"; Phoenix Iron Works, 10 1/2" x 12", automatic. Boilers, 60 H. P. Firebox Portable; 40 H. P. Firebox Portable; 25x35 H. P. Scotch Boilers; Vertical Boilers, all sizes. Three 18 H. P. Traction Engines, \$350 each; 40 H. P. Springfield Gas Engine; 15 H. P. Superior Gas Engine; 16-horse McKewen Double Drum Hoisting Engine. The above goods must be sold at once.

D. L. CASEY MACHINE CO. SPRINGFIELD, OHIO

SCRAP MATERIAL

We purchase all grades of old Scrap Material and pay highest market prices. No quantity too large or too small for us to handle. Let us hear from you if you have old scrap material to dispose of.

H. KANDER & COMPANY
Bowling Green Ohio

PIPE

FOR ALL PURPOSES

Slightly used Pipe from 1" to 12" with new threads and couplings. Thoroughly overhauled and tested before shipping.

We can save you money.

Jos. Greenspon's Sons Iron & Steel Co.
St. Louis, Mo.

We Buy and Dismantle

FACTORIES

MILLS

MACHINE SHOPS

and all kinds of

INDUSTRIAL PLANTS

We are always in
the market to buy

Scrap Iron and Steel OF EVERY KIND

FRANK SAMUEL

Harrison Building

15th and Market Sts Philadelphia, Pa.

MACHINERY WANTED

I will buy all or any part of a machine shop, tools principally, that prove satisfactory on inspection, and where price is satisfactory. Address

SPOTCASH, Box 1417, Jacksonville, Fla.

Used Engines in Stock

PHILADELPHIA

Overhauled, Ready for Immediate Delivery

HORIZONTAL SLIDE VALVE

- 3 8"x10" "Snell & Meharg."
8"x10" C. C. "Erie."
8"x14" S. C.
10"x8" S. C. "Buffalo Forge."
2 10"x12" S. C. "Nagle."
10"x15" S. C. "Supplee."
12"x16" S. C. "Erie."
12"x16" S. C. "Chandler & Taylor."
14"x16" S. C. "Brownell."
15"x16" S. C. "Nagle."
16"x18" S. C. "Erie City."

VERTICAL SLIDE VALVE

- 7"x7" C. C. "Sturtevant."
8"x8" S. C. "Snell & Meharg."
9"x9" C. C. "Nagle."
14"x14" C. C. "Nagle."
14"x16" C. C.

CORLISS ENGINES

- 12"x24" R. H. "Whitehill."
16"x42" Heavy Duty L. H. "Ohio."
18"x32 R. H. "Naylor."
18"x42" L. H. "Watts-Campbell."
24"x56" L. H. "Watts-Campbell."
- We have a number of smaller engines, also other Steam and Electric Power Equipment, Metal and Woodworking Machinery. Send for list.

L. F. SEYFERT'S SONS, Inc.

437-441 N. 3rd St. PHILADELPHIA

MACHINERY BARGAINS

A few selections from our big stock of snags. Write for Free Complete List No. XB 213.

1000 tons "T" Rails, 12 to 16 lbs.

No. XB-31. Worm Gear Freight Elevator, 2000 lbs. cap.

No. XB-32. Hoisting Engine, Dbl. Cyl. Drum, reversible link motion, 10 in. x 14 in.

No. XB-33. 200 Storage Tanks, capacities from 25 to 2000 gals.

No. XB-34. Sprague Electric 3-phase 20 H. P. Motor.

No. XB-35. 200 pieces 15-in. 42-lb. "I" Beams.

No. XB-36. Austin Jaw Crusher, 14-in. x 10-in. Opening.

HARRIS BROTHERS COMPANY, Owners
Chicago House Wrecking Company
35th and Iron Streets CHICAGO, ILL.

FOR SALE

Special Bargains to Quick Buyers

A. C. GENERATORS DIRECT CONNECTED TO CORLISS ENGINES

- 1 600 K. W. 440-volt 60-cycle 3-phase Alternator, direct connected to 30x48 Allis HEAVY-DUTY DOUBLE-ECCENTRIC Corliss Engine.
- 1 400 K. W. 440-volt 60-cycle 3-phase Alternator, direct connected to 24x48 HEAVY-DUTY Rolling Mill Type Frame DOUBLE-ECCENTRIC Corliss Engine.

CORLISS ENGINES

- 1 28x48 Vilter HEAVY-DUTY DOUBLE-ECCENTRIC Twin Engine.
- 1 24x48 Nordberg HEAVY-DUTY DOUBLE-ECCENTRIC Twin Engine.
- 1 28x48 Bass HEAVY-DUTY Single-Eccentric Twin Engine.
- 1 30x48 HEAVY-DUTY Belt-Drive Simple Engine.
- 1 28x48 Vilter Rope-Drive Simple Engine.
- 1 18x42 Whitehill Belt-Drive Simple Engine.
- 1 14x36 St. Louis Belt-Drive Simple Engine.

COMPOUND ENGINES

- 1 24x46x36 Buckeye HEAVY-DUTY Rolling Mill Type Frame DOUBLE-ECCENTRIC Rope-Drive Compound Condensing Engine.
- 2 16x32x42 Murray HEAVY-DUTY DOUBLE-ECCENTRIC Belt-Drive Cross Compound Condensing Engines.
- 1 20x14x36 Allis-Chalmers HEAVY-DUTY DOUBLE-ECCENTRIC Cross Compound Condensing Engine.

4-VALVE ENGINE

- 1 16x22 Atlas HEAVY-DUTY Belt-Drive 4-valve Engine. Used two years only. Virtually new.

Pfannmueller Engineering Company
Suite 1733 First National Bank Building
CHICAGO

DYNAMOS AND MOTORS, SWITCH-BOARD, INSTRUMENTS, FANS, Etc.

- For quick removal—
- 150 K. W. 8-pole C. & C. to 4-valve Fleming engine.....\$1400.00
- 75 H. P. new 4. E. 550 R. P. M. slip-ring 3-phase motor, with base pulley and controller.....500.00
- 50 H. P. 3-phase G. E., complete, 850 R. P. M.....290.00
- 50 H. P. 2-phase G. E., complete, 850 R. P. M.....280.00

Carload Small Direct Current Semi-enclosed Motors at following prices:

- 1/4 H. P., 1400 R. P. M.....\$3.50
- 1/2 H. P., 1400 R. P. M.....11.00
- 3/4 H. P., 1400 R. P. M.....16.00
- 1 H. P., 1400 R. P. M.....23.50

Special price in lots of ten. We carry large stock electrical machinery. Let us have your requirements.

R. Scheinert Co., 125 N. Third St., Phila., Pa.

Machinery

Second-Hand and Rebuilt

Inquiries Solicited

THE L. A. GREEN EQUIPMENT CO.
Penn & 32nd Sts., PITTSBURGH, PA.

SPECIAL

Low Price for Quick Sale

28 and 56x48 Rice & Sargent Cross Compound Corliss Engine with 1500 K. W. 2400-volt Westinghouse Electric & Mfg. Co. Generator. Will sell Engine separately.

We have 10 separate plants, containing Steam Producers and Natural Gas Engines, Generators, etc. We want to move quickly. Largest stock between Philadelphia and Chicago.

Send for List.

EDGAR M. MOORE & COMPANY
PITTSBURGH

THERE IS A REASON

why our properly rebuilt machinery gives satisfaction

ASK US

ENGINES, CORLISS: 25x48 Filer & Stowell heavy duty; 24x48 Hamilton; 18x42 Lane & Bodley; 16x42 Allis; 14x42 Hamilton; 14x38 Nagle; 12x30 Hamilton; 10x30 Hamilton; 10x24 Hamilton.

ENGINES, AUTOMATIC: 2 21x22 Ridgway; 19x18 Ball; 14x14 Ideal; 10x16x12 Buffalo Compound; 12x14 Green; 12 1/2x12 Armington & Sims; 10x18 Buckeye; 9x10 New Victor; 8x14 Noyes; 8x10 McEwen; 5x6 Harrisburg.

ENGINES, THROTTLING: 20x24 H. S. & G.; 16x18 Skinner; 16x18 Ames; 14x14 Lewis, vertical; 12x13 New Enterprise; 12x14 Gibbs; 11x16 H. S. & G.; 10x12 Ajax; 10x15 Nagle; 9x16 Brownell; 8x10 New Erie; 8x10 Brownell; 7x10 Atlas; 6x6 Beggs; 3x4 Kriebel.

BOILERS, STATIONARY; HIGH PRESS. SURE: 1 200 H. P. for 125 lbs.; 2 150 H. P. for 150 lbs.; 3 150 H. P. for 125 lbs.; 2 100 H. P. for 125 lbs.; 2 80 H. P. for 125 lbs. Standard from 150 H. P. to 20 H. P. for 100 lbs.

BOILERS, FIRE BOX: 150 to 10 H. P. high and low pressure.

BOILERS, VERTICAL: 100 to 4 H. P. plain and submerged tubular.

GENERATORS AND MOTORS: All sizes and kinds, belted and direct connected.

MISCELLANEOUS: Heaters, open and closed; pumps, all sizes; sawmills; cut mills and feed grinders; exhaust fans and blowers; woodworking machinery; iron-working tools; leather, rubber and canvas stitched belt; pipe, valves and engine and boiler fittings.

Sole manufacturers of the Leader Injector and Ejector. Ask for circular.

THE RANDLE MACHINERY CO.
1734 Powers St., Cincinnati, O.

250 Volt Direct Connected Sets

- 2 300 K. W. 250 volts 125 R. P. M. CROCKER-WHEELER GENERATORS to tandem compound Wetherill Corliss engines; like new; used only six months. Each \$850.00
- 1 160 K. W. 250 volts 8-pole Form L GENERAL ELECTRIC GENERATOR to a 21x16 Baldwin engine with panel. \$2200.00
- 1 100 K. W. 250 volts 250 R. P. M. CROCKER-WHEELER to Harrisburg engine, \$1700.00
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- 1 55 K. W. 250 volts 280 R. P. M. C. & C. GENERATOR direct connected to a 12x12 Harrisburg Fleming slide-crane engine, \$1100.00.
- 1 35 K. W. 250 volts 300 R. P. M. CROCKER-WHEELER direct connected to a 3x10 Ames engine, \$1000.00, with fine switch-board.

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FOR SALE—New Lathes at Bargain Prices

Geared head 20"x10", 18"x10", 18"x8", 15"x8", 16"x6". Cone head 20"x10", 15"x8", 15"x6". All the above with semi-quick-change gears. Second-hand lathes with geared heads, quick-change gears, 16"x8", 16"x6", 15"x6". Second-hand lathes, cone head, plain gears, 29"x15", 27"x16", 20"x10", 18"x8", 13"x6", 13"x5".

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In replacing our manufacturing equipment we find the following first-class

Used Machine Tools

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- 16"x6" Reed.
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- 20"x8" Lodge & Shipley, Q. C. G.
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- 24"x8" Lodge & Shipley, Q. C. G.

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- No. 3 Lodge & Shipley Rapid Reduction Lathe.
- 24"x7" Lodge & Shipley Chucking Lathe.
- 14"x8" Towsley Speed Lathe.
- 2 18"x5" Lodge & Shipley Single Pulley Driven Lathes.

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Globe Power Hack Saw, 8" capacity.

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- One Marion Double Grinder.
- One Marion Double Grinder on stand.
- One Diamond Disk Grinder on column.
- One Sturtevant Blower, diameter of outlet 2 1/2".
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- Universal Swivel Table for Radial Drill.
- Brown & Sharp Grindstone Frame for 5"x36" stone.
- One Mueller Grindstone Frame for 4"x24" stone.
- One 12"x40" Mumford Molding Machine.
- Write for complete description with prices of machines in which you are interested.

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Bargains in Machinery and Supplies.

Direct Current Generating Sets, Boilers, Feed Water Heaters Horizontal and Vertical Steam Engines Air Compressors Steam Pumps and Mine Equipment

All in Excellent Condition.

The above equipment displaced from 19 coal mines by the introduction of Central Station Power.

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Second-hand, all sizes, 1/2" and larger, with new threads and couplings, guaranteed for service.

- 1 1/2-yd. Ransome concrete mixer with gasoline motor and loader on wheels.
- 3 3/4-yd. and 2 1/2-yd. Ransome mixers with engines on skids.
- 2 No. 2 1/2 Smith concrete mixers with engines on wheels.
- 1 5-lever Stroudsburg 7x10 cableway engine.
- 12 Lidgerwood, Lambert and other hoisting engines.
- 24" and 20" industrial rail and turntables.
- 1 5 H. P. Meltz & Weiss gasoline engine.
- 1 4-leaf 1-yd. orange-peel bucket.

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150-foot American Painted Angle Iron Steel Tower.
14"x13" 5"x2" Cypress Tank, round hoops and indicator gauge.
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14-horse-power Stover Gasoline Engine.
1330 feet 4" Galvanized Pipe.
780 feet 2 1/2" Galvanized Pipe.
In splendid order, having been used only 2 1/2 years. Will sell at a bargain.
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Suitable for All Practical Purposes

All Sizes In Stock Ready for Shipment

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15 H. P. De La Vergne, \$300.
20 H. P. De La Vergne, \$450.
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DIESEL OIL ENGINE

170 hp. direct connected to 120 kw., 250 v. Generator, complete.
75 hp. belted type, complete.
Cheap Power. Sacrifice.
Address Power Equipment Company, 500 Fifth Ave., New York

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- 1 175 H. P. 72"x20" Horizontal Return Tubular, 130 lbs. steam.
- 1 150 H. P. 72"x18" Horizontal Return Tubular, 125 lbs. steam.
- 1 150 H. P. Babcock & Wilcox Water-Tube, 150 lbs. steam.
- 1 125 H. P. 66"x18" Horizontal Return Tubular, 125 lbs. steam.
- 1 80 H. P. Vertical, 100 lbs. steam.
- 1 70 H. P. 54"x16" Horizontal Return Tubular, 125 lbs. steam.

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- 28"x48" Hamilton.
- 28"x60" International.
- 28"x48" Allis.
- 18"x42" Watts-Campbell.
- 16"x36" Allis.
- 16"x32" Rickards.
- 14"x42" Hamilton.
- 2 14"x36" Scottsdale.
- 12"x24" Wetherill.
- 10"x24" Watts-Campbell.

AIR COMPRESSORS

- 1 18"x20 1/4"x13 1/4"x24" Ingersoll-Sargeant Class A Straight Line, two-stage. Capacity 940 cu. ft.
- 1 22"x22 1/4"x24" Ingersoll-Sargeant Class A Straight Line. Capacity 973 cu. ft.
- 1 12"x14 1/4"x14" Ingersoll-Sargeant Class A Straight Line. Capacity 385 cu. ft.
- 1 12"x12"x16" Ingersoll-Sargeant Class C Straight Line. Capacity 275 cu. ft.
- 1 10"x10"x10" Ingersoll-Sargeant Duplex. Capacity 275 cu. ft.
- 1 10"x10"x10" Cox & Sons Duplex. Capacity 275 cu. ft.

DIRECT CONNECTED UNITS

- 1 200 K. W. 220-volt A. C. Westinghouse 3-phase 25-cycle Generator, direct connected to Buckeye Engine.
- 1 150 K. W. 250-volt D. C. Crocker-Wheeler Generator, direct connected to 14 1/2"x24"x16" Wright Center-Crank Tandem Compound Automatic Engine, 200 B. P. M.
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- 1 50 K. W. 125-volt D. C. Westinghouse 6-pole Generator, direct connected to 10"x18"x10" Westinghouse Compound Engine, 315 B. P. M.

BOILERS, PUMPS, HOISTING ENGINES
WESTINGHOUSE ENGINES, GAS AND
GASOLINE ENGINES, HEATERS,
STONE CRUSHERS, AND GEN-
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- 32"x12" New York Safety. 36"x14" Smith.
- 30"x18" Bement-Miles.
- 30"x22" Bement-Miles. 28"x18" Fifeild.

FRANK TOOMEY, Inc.

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- 27"x21" Pratt & Whitney.
- 26"x17" Johnson. 26"x12" Fifeild.
- 22"x15" Lodge & Davis. 24"x10" Putnam.
- 19"x18" LeBlonde, turret attachment.
- 18"x10" Schumacher & Boye, taper attachment.
- 18"x6" Hendey Lathe, taper attachment.
- 33" Extension Bed Gap Lathe.
- 18"x8" Reed.
- 22"x8" Schumacher & Boye Lathe.
- 20"x12" Lodge & Davis.
- 19"x12" Fitchburg, with turret attachment.

PLANERS

- 11"x8" 10"x18" Retts.
- 60"x60"x14" Sellers, 4 heads.
- 60"x60"x14" Pond, 2 heads.
- 48"x48"x16" Detrick & Harvey Open-Side Planer, cross rail lengthened to plane 60" wide, 3 heads, supplementary rolling table.
- 36"x36"x12" New Haven, 1 head.
- 36"x33"x12" New Haven.
- 23"x33"x12" Woodward & Powell.
- 28"x28"x7" New Haven, light pattern.
- 28"x28"x7" Heavy pattern, has radius attachment. Several small planers.
- 42"x42"x12" New Haven.
- 48"x48"x8" Sellers, 2 heads, with blocking 54".
- 26"x26"x6" Putnam.

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- 24" American, back geared.
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Several small Shapers as well as traveling head, besides all sizes of new machines in stock.

MISCELLANEOUS

- 72" Bickford Vertical Boring Mill, 2 heads.
- 60" Sellers Boring Mill, 2 heads.
- 48" Sellers Boring Mill, 2 heads.
- 36"x12" Heavy-Duty Slab Milling Machine.
- 30" Throat Double-End Punch and Shear. Sellers make, capacity 1 1/2", weight about 35,000 lbs.
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- 48" Bement Horizontal Boring Mill.
- 2 No. 22 Adriance Riveting Presses.
- No. 3 Cincinnati Universal Milling Machine.
- No. 3 Adriance Inclinable Press.
- No. 3 Kempnith Milling Machine.
- No. 6 Whitney Hand Milling Machines.
- No. 2 Warner & Swasey Wire Feed Screw Machines.
- 3-spindle Barr Sensitive Drill Press.
- 5 No. 103 Bliss Card Cutting Presses.
- 3500-lb. Bement, Miles & Co. Double Frame Steam Hammer.
- 350-lb. Bement, Miles & Co. Single Frame Steam Hammer.
- 26" Niles Vertical Boring Mill, 2 heads.
- 17" Foster & Kimball Turret Head, Wire Feed, Friction Head.

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Capacity, - - - 70 Tons

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A Buffalo Steam Ten-Ton Tractor and Roller, and Twelve 5-Ton Wagons for use with it. Used about three months.

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- 1 Hoisting Engine.
- 1 Centrifugal Pump.
- Boilers, Stack, etc.
- 1 Porter build Locomotive, Saddle-Tank, 7x12, 36" gauge, new.
- 1 standard gauge 17x24 Baldwin.
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- 1 36" gauge 9x14 Saddle-Tank Porter.
- 1 10x16 36" gauge Richmond Loco. Works 6-wheel Saddle-Tank.
- 1 42" gauge American type Va. Iron Works, 9x16.
- 1 42" gauge Saddle-Tank Porter.
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One Steel Stack, S. S., 6"x100'.
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Also many other smaller sizes, all rebuilt and in excellent condition.

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One 10-ton gasoline macadam roller, latest type, standard make, nearly new. Will sell at a low price. Write

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LIGHT STEEL RAILS

12, 16, 20, 25, 30, 35, 40 and 45 lb. Sections
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In All Sections for Immediate Shipment from Stock

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LARGE TONNAGES—Carload and less
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1000 tons—30 and 35 lb. per yard.
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Centrally located. Inquire for prices. We
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12, 16, 20, 25, 30, 35, 40,
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With Splice Bars, Bolts,
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First Quality Carefully Inspected

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Several Locomotives and Cars.

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60—67s—70s—74s—90s
With angle bars

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Also relayers of other weights and new
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Four wheel type

40 tons; 17"x24"; 160 lbs. pressure

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Gauge. 150 Locomotives at our shops 6
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Four Standard-Gauge Climax Locomotives,
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We have ten Steam Shovels of different
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PROMPT DELIVERY.
8, 12, 16, 20, 25, 30, 35, 40 pounds per yard.
With Splices and Spikes.

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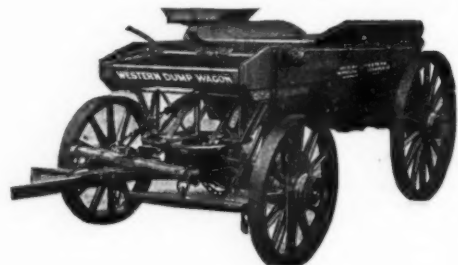
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OLIVER DUMP & SPREADER CARS

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Only AIR DUMP CAR under absolute control of operator. Can be brought back to upright position, after passing center of gravity, before entire contents of car have been unloaded. This admits of equal distribution of material on both sides of track. Write.

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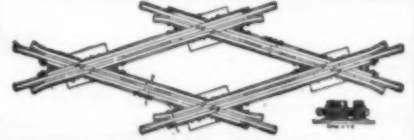
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- replaceable bronze bearings.
- adjustable to crush to any size from 1/2" to 3".
- portable outfits with folding elevators, stationary crushing plants, motor crusher outfits with engine and crusher on same trucks.

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1000 Tons 75 Lbs. Per Yard.

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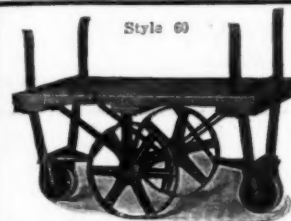
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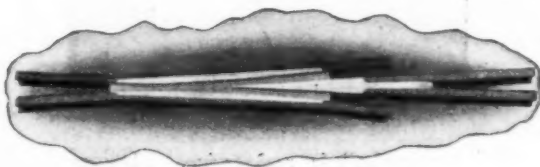
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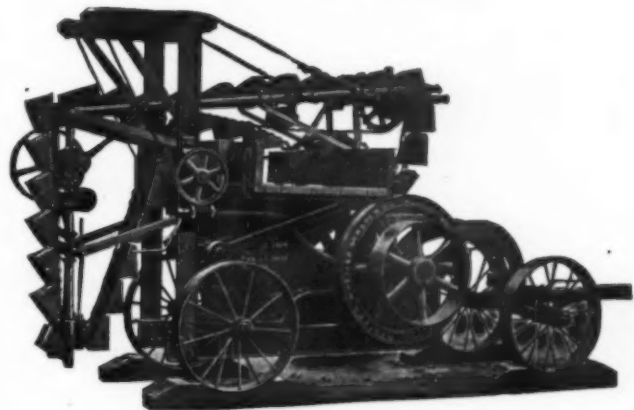
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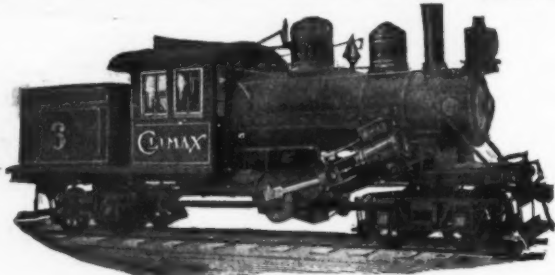
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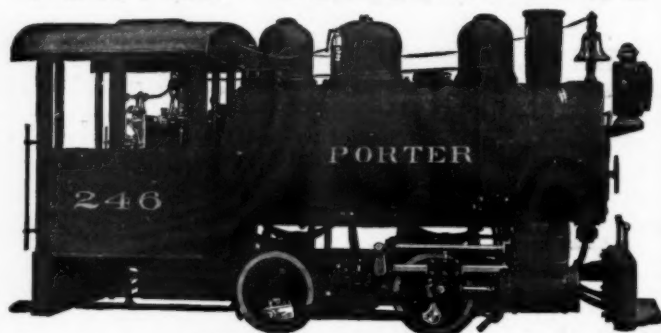


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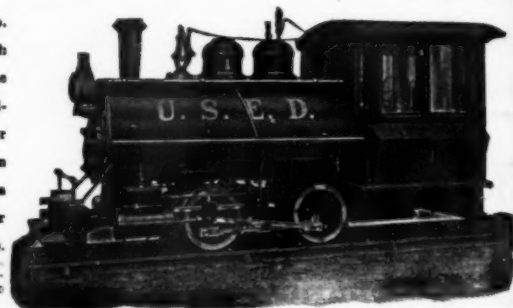


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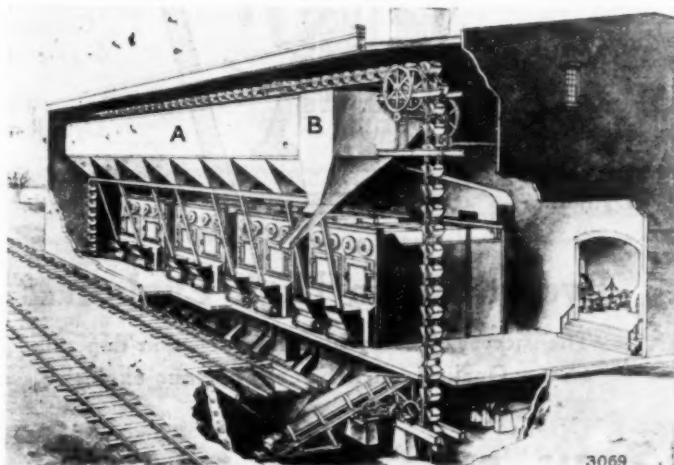
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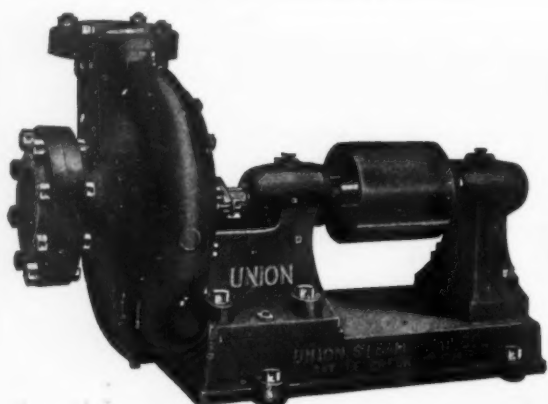
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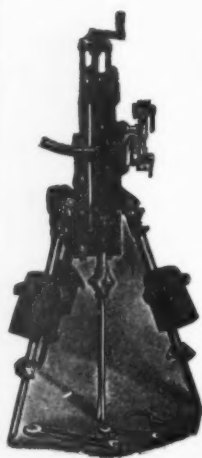
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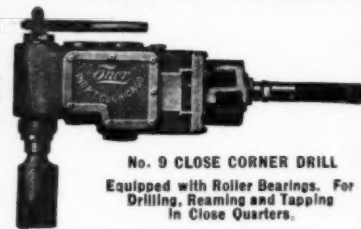
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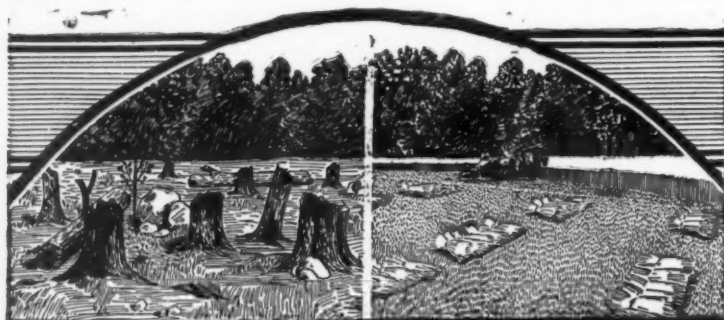
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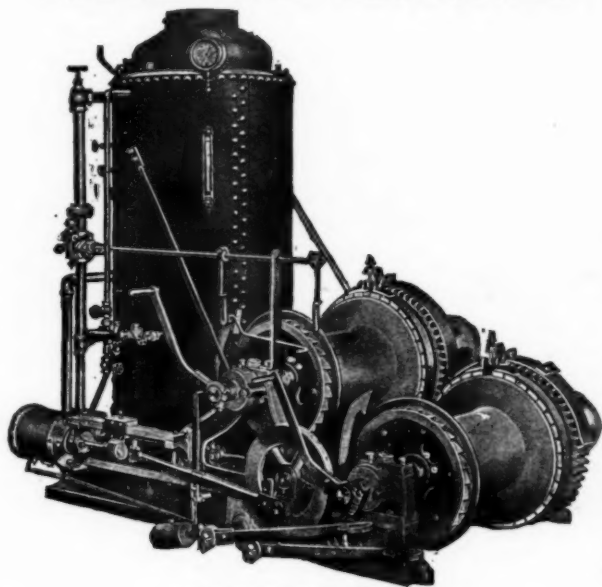
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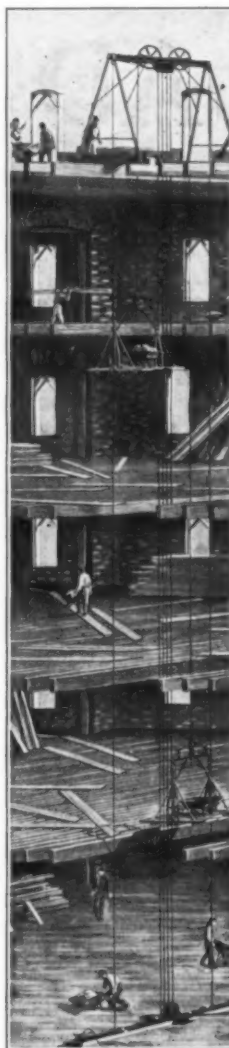
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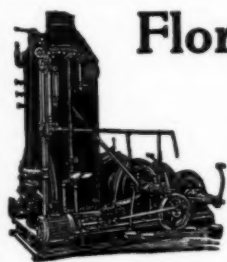
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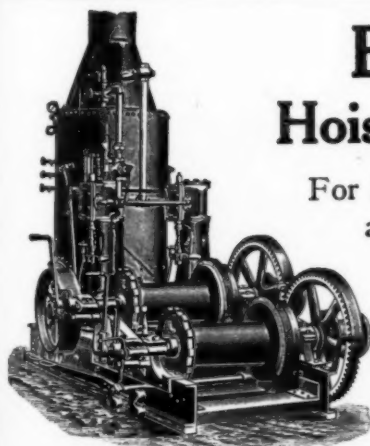
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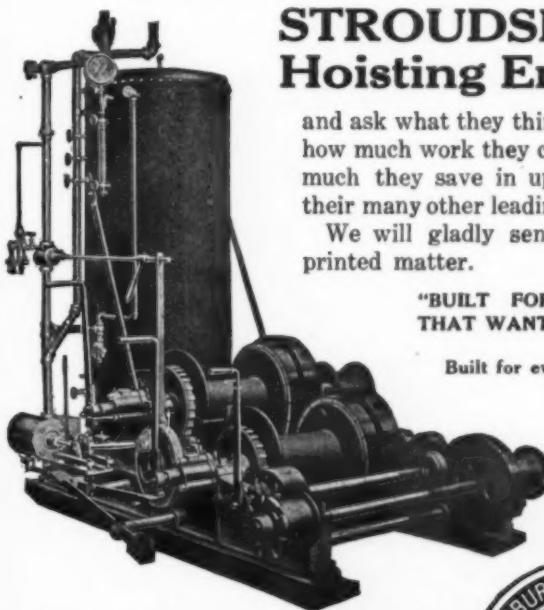
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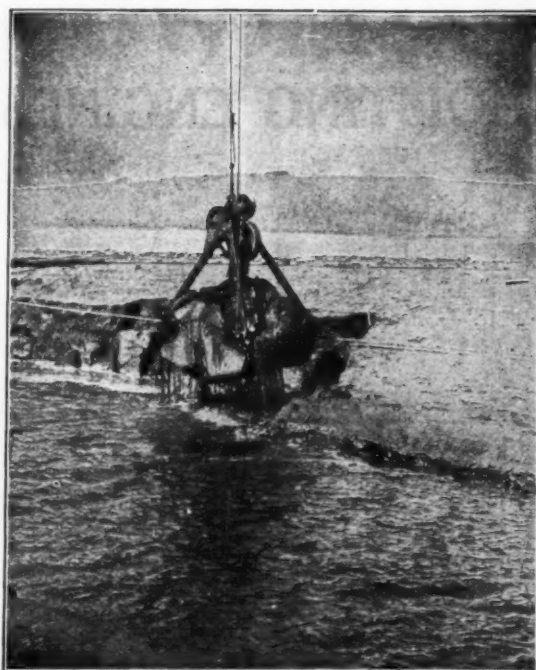
means MORE THAN ITS RATED CAPACITY, which is based on water level measurement—that is, when the bucket is level full. The overload which all Hayward Buckets get means just so much more material every trip.

Remember there is a Hayward Bucket designed for handling every kind of material a Bucket will dig, and if our Regular types will not do your work, we will build you a Special Bucket that will.

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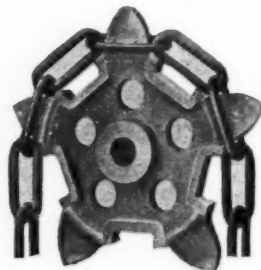
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Each link gauged to insure accuracy of pitch.

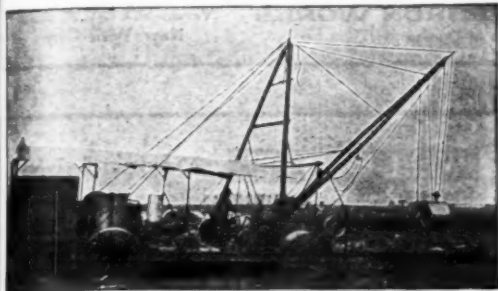
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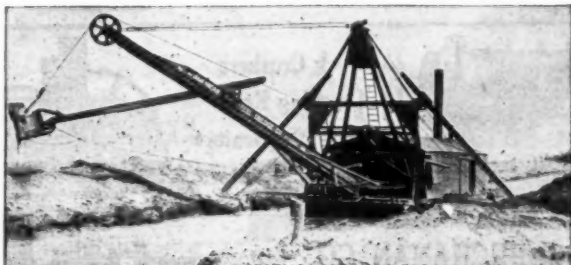
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STEAM AND GASOLINE POWER



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SUCTION DREDGES

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Because one is designed without regard to efficiency, while the other is a well proportioned unit, built regardless of the cost of a hundred small details in construction that cut the maker's profits, but which gives you an efficient machine.

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Can be operated by one man. Swings in a complete circle. Invaluable for road and street grading and all classes of excavating. Built strong and for continuous work. Used and endorsed by contractors the world over.

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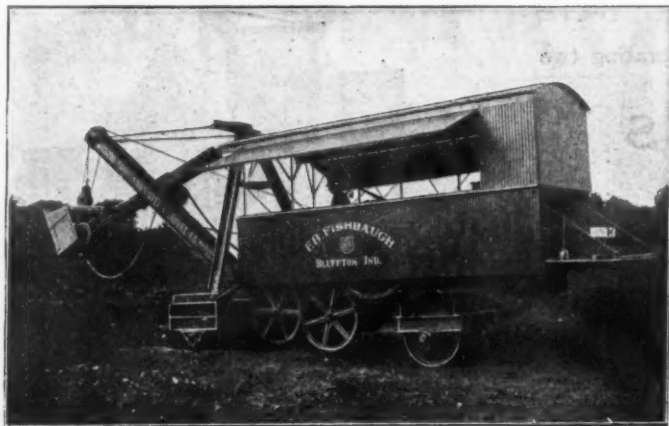
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Complete Elevating, Conveying and Power Transmission Equipments for Every Purpose

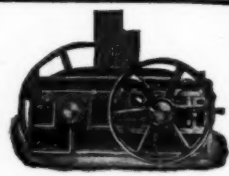
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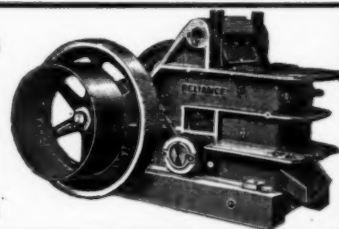
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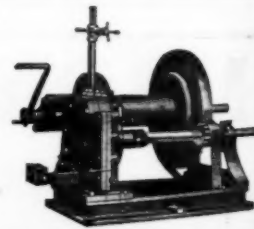
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Now is the time to place your orders. Don't wait until the ice and snow comes. You don't want frozen material, and we can't dig it. Place your orders now. At the same time, don't forget the

FOUNDRIY SUPPLIES

We will appreciate your orders and inquiries.

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Special Shovels. Figure it out — can you afford to buy other shovels, if our Special shovels will handle enough more material per man to pay for themselves over the other shovels? We will guarantee above results.

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Malleable Iron Castings

of Highest Quality

Annual Capacity 25,000 Tons.

Castings of all descriptions furnished.

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MALLEABLE IRON CASTINGS

High Tensile Strength

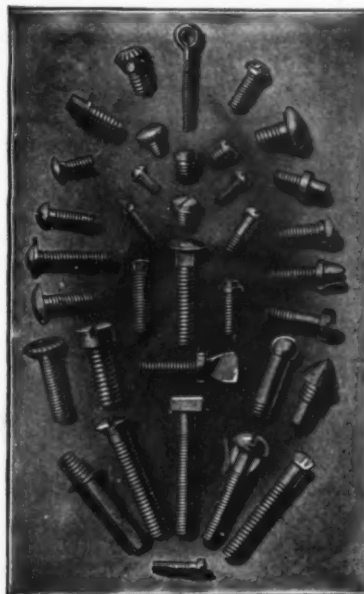
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We are equipped to make large and small castings.

Prompt Shipment Our Specialty

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Machine Screws

Supplied in One Gross
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A Complete Stock at All Times

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In the Manufacture of

High-Grade Rivets and Special
Screws of all kinds and from all
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If you favor us with one order
we shall expect more.

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High Grade Foundry Sand



For Brass, Aluminum, Grey
Iron, Malleable, Hardware
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CASTINGS

We mine and ship all the year
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Write for free sample.

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Established 1884

Lebanon Valley Iron & Steel Co.
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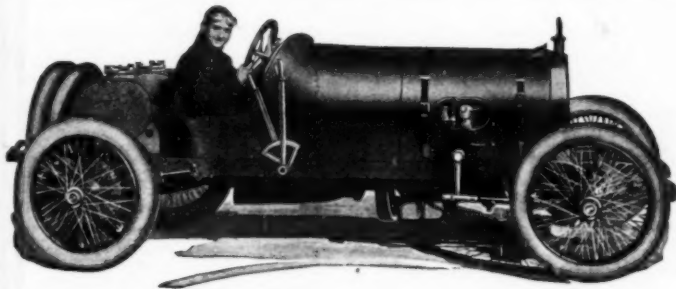
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With either Hot Pressed or Cold Punched Nuts

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The TRANSMISSION AND CLUTCH, built by us for the Mercer Racers, contains our stock Gears and Discs.

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Main Drive Surfaced with STANDARD ASPHALT MACADAM BINDER "B."

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ASPHALT BINDERS

THE success of the PENETRATION method of road construction in the South and elsewhere has been made possible largely through the use of STANDARD ASPHALT MACADAM BINDER "C."

Five years test of time has fully demonstrated the success of this type of road, when constructed with an asphalt of 99.9% purity.

STANDARD PAVING ASPHALT for sheet asphalt construction, and STANDARD MIXING ASPHALT for bituminous concrete, are extensively used for these types of pavements in most of the large cities in the East and South. All of the above products made from the best grade Mexican asphaltic petroleum, refined in the most approved manner.

For specifications and tests write to

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Its increasing adoption for heavy traffic pavements is due to a high standard of quality uniformly maintained.



is being used by leading cities, towns and counties in all parts of the country for sheet asphalt, asphaltic concrete, asphaltic macadam (mixed method) and asphaltic macadam (penetration method).

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PLOWING WITH THE TWENTY-FORTY HUBER GAS TRACTOR

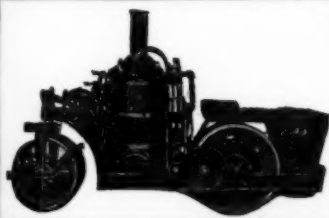
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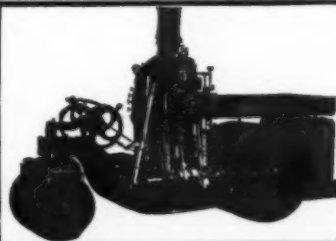
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Get "ERIE" ROLLERS

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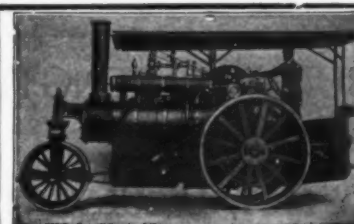
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Capacity 2000 Square Yards 2-Inch Top or Macadam Daily

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For all purposes. In any Quantity. Delivered to points in the Carolinas, Georgia and Florida. We make PROMPT shipments.

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LARGEST OUTPUT QUICKEST DELIVERIES in the South Atlantic States
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Formerly The Universal Telegraphic Company
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Estimates Cheerfully Submitted



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Steam

ROLLERS

The American Standard

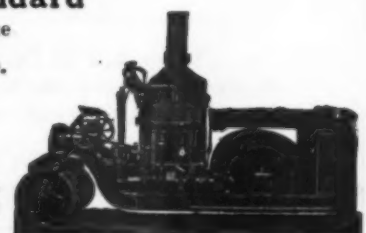
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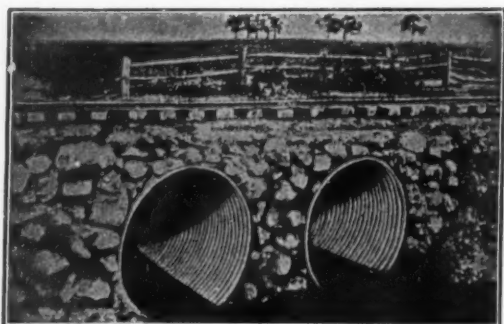
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BRANCH OFFICES: 324 Dickson Building, Norfolk, Va., and Robson Prichard Building, Huntington, W. Va.

"Armeo Quality Stands the Test—Dixie Service Does the Rest."

Made of the Purest Iron Known

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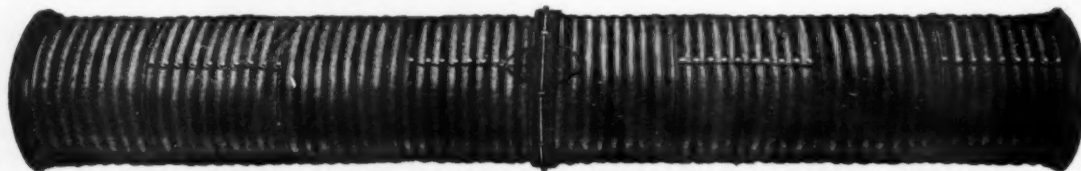
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Factory, ATLANTA, GA.

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THE RED "S" CULVERT—

The Red "S" culvert is manufactured only by this company, and every culvert you see with the big Red "S" on it, you will find that it has the angle iron reinforcements. The Red "S" is the STRONGEST on earth.



SALISBURY—STRENGTH—SERVICE—STABILITY

Guaranteed 25 Years.

Will Last 100 Years.

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SALISBURY, N. C.

250 YEARS

Some Cast Iron Pipe has lasted that long. Positive proof of its wonderful lasting qualities. It is strong, durable, economical. These are some advantages of

GALION IDEAL CAST IRON CULVERT PIPE

Made of the best grade foundry pig iron. Indorsed by many of the leading Highway Officials and Engineers. You are sure to please everybody and for generations to come if you specify and insist on Galion Ideal Cast Iron Culvert Pipe.

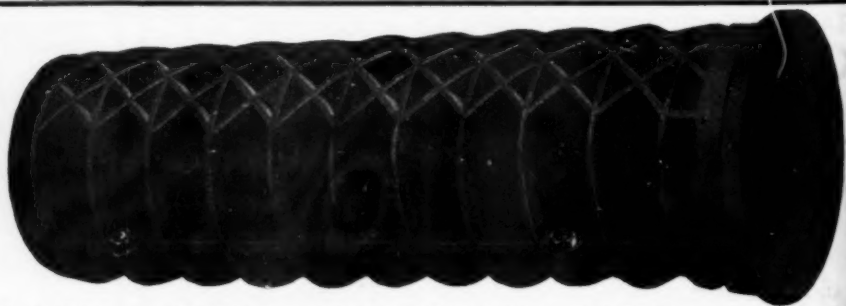
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THE GALION IRON WORKS & MFG. CO., 117-119 East Main Street.

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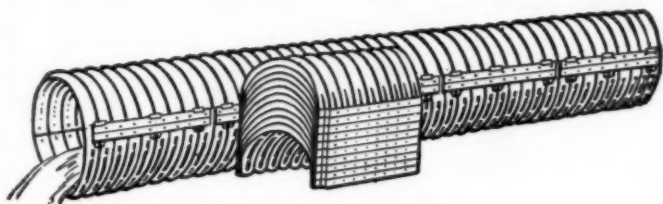
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BUTT-JOINT NESTABLE METAL CULVERT

(Patented)



Ten feet constructed and ten feet nested.
Every half section exactly alike.
No holes cut in metal to catch water or oxygen.
No steel bolts or rivets to start electrolysis.
Any child can construct it.

These culverts have been used for every conceivable purpose and in all parts of the country. They have proven so satisfactory that our *repeat* orders have kept our factories busy. We could furnish hundreds of references, but after all your own experience is the best evidence. A trial order will determine the matter for you. We guarantee satisfaction.

PERMANENT ROADS

We use the best metal that can be manufactured from pure ingots.



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If you are contemplating installing a culvert that will last for years to come, buy our

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We also highly recommend our

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FOR IRRIGATION

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Proposals advertised in the Manufacturers Record bring good results.



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If it's a Culvert Job—Use the "ACME" (NESTABLE)

CORRUGATED NO-CO-RO METAL CULVERT

Note the practical use, illustrated, to which these 72-inch upper half-sections of "ACME" (NESTABLE) Culverts were put, years ago, in connection with this 50-foot-long stone-wall Culvert in The Carolinas.

"ACMES" are not an experiment—they've been used for years in all parts of the World with uniform satisfaction.

You will be interested in the surprising adaptability of "ACME" (NESTABLE) Culverts as illustrated in our big Culvert Catalog. Write for it.

For quotations for delivery in North and South Carolina, address—
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Are best because purest.
Write for special culvert catalog and information.
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Our "Friction Joint" Gives Maximum Strength

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Salt Glazed Sewer and Culvert Pipe

Wall Coping, Drain Tile, Flue Lining, Chimney Tops, Hollow Tile, Fire Proofing, Vitrified Brick, Fire Brick.

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BEST TESTERS AND MOST DURABLE

THE CARLYLE PAVING BRICK CO., PORTSMOUTH, O.

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Water, Gas and Flange Pipe in sizes from 3" to 60" inclusive. Our Motto—"Quality First."

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SEWER PIPE

Send your inquiries to the
CANNELTON SEWER PIPE CO.

MADE OF FIRE CLAY
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AMERICAN PIPE & CONSTRUCTION CO.

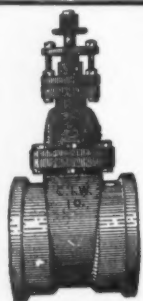
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No. 112 NORTH BROAD STREET

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Manufacturers of PHIPPS' HYDRAULIC PIPE



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Fire Hydrants, Valves, Valve Boxes,
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ALSO MUNICIPAL AND BUILDING CASTINGS

Estimates Promptly Furnished

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The following makers of Cast Iron Pipe are independent
of each other and competitors; inquiries may be sent to any
or all of these with assurance of prompt and full response:

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in all regular sizes, 3 inch to 84 inch

FOR

WATER
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FLANGED PIPE FLEXIBLE JOINT PIPE
SPECIAL CASTINGS LARGE CYLINDERS
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Manufacturers of



FOR **WATER AND GAS**

SPECIAL CASTINGS

Flanged Pipe and Flanged Fittings
General Founders and Machinists

GLAMORGAN

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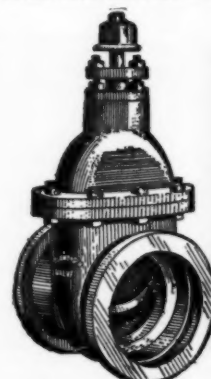


Glamorgan "Patented"
Compression Hydrants
Gate Hydrants

VALVES

FOR

Water, Gas and Steam



HYDRANTS.

VALVES.

We solicit inquiries for Grey Iron Castings
of any description.

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THE MOST PERFECT ANTI-FREEZING MADE

The frost case provides a dead air chamber around the body of the hydrant, preventing freezing. With a play of several inches, the frost cannot heave or break the hydrant.

The Standard Compression Hydrant needs no frost case. While necessary in other types, more than 90% of these have been sold without the frost case.

The waste or drip is automatic and operates with absolute certainty.

The hydrants are interchangeable in all their parts. We have a full stock of parts constantly on hand for immediate shipment.

All hydrants are thoroughly inspected and tested to the specified pressures before leaving our factory.

This Company was established 84 years ago. In that time our work has been confined exclusively to the manufacture of Water Works and Fire Department supplies. The satisfaction we have given our customers is indicated by our steadily increasing business and is proven by the hearty commendation in the testimonial letters which form a part of our 48-page catalogue.

We will mail a copy on request.



Improved Patent
Fire Hydrant
With Sliding Frost-Proof Case



Improved Standard Compression
Fire Hydrant
Without Sliding Frost-proof Case

The Bourbon Copper & Brass Works Co.

Established
1830

618-620 E. Front Street, Cincinnati, Ohio

Thomas Ford
President

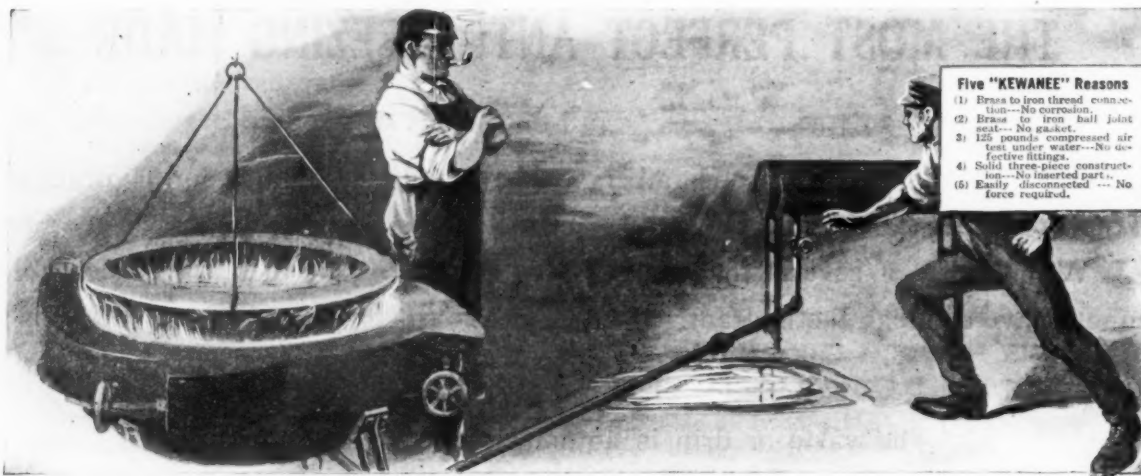
PATENT FIRE HYDRANTS

STOP VALVES

EXTENSION VALVE BOXES

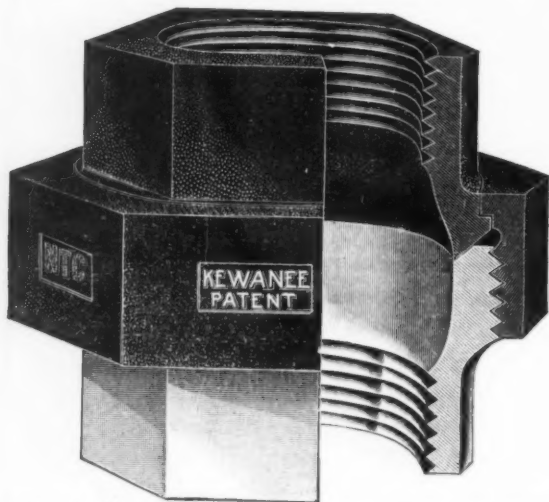
Interesting Experiences with "KEWANEE" Unions

- ¶ This is the twentieth* of a series which we intend publishing in these pages from time to time, giving actual experiences supplied by consumers of "KEWANEE" Unions.
- ¶ If you have had similar interesting experiences, tell us about them; your brothers in the craft will find yours as interesting as these.



Look Out There! Stop!! Put a "KEWANEE" in There!

EXPERIENCE No. 20*



The Air-Tested Union with No Inserted Parts
The "Safety-First" Union

¶ This letter was received from a repair shop foreman of a Florida Railroad†:—

"Gentlemen:—

Seeing your ad. brings to mind an incident with the 'KEWANEE' Union.

"As a fact a mechanic appreciates and has high regard for a money-saving and life-protecting device. As foreman for the Seaboard Air Line Ry. in this city in June, 1911, I had a mechanic taking off driving wheel tires with a gasoline heater. On going out to see how he was getting along with the job (as you know working with gasoline is somewhat dangerous) I found a union in the pipe connected to the hoop leaking very bad. I knew it was useless to continue to put gaskets in the old union as it was not only expensive but very unsatisfactory, so in a twinkling of an eye I readily saw where a 'KEWANEE' Union would come to my rescue, and give protection to the company and to the operator, as the brass ball joint against the iron will stand high pressure.

"Easy to connect without force, and no corrosion makes it the neatest, safest, and most economical union on the market and I think all fair minded men will agree with me.

"With best wishes for 'KEWANEE'S' success, I am, Yours truly, "

† Name and address supplied on request.

¶ This wideawake fellow saw instantly a danger that a "KEWANEE" Union would eliminate.

¶ "KEWANEE" meant leakless connection, in his mind. And he was right.

¶ What about you? Why not find where "KEWANEE" might save YOU time and trouble and possibly disaster? Write for The Whole "KEWANEE" Family.

National Tube Company,
1802 Frick Building, Pittsburgh, Pa.

Please send me your booklet, The Whole "KEWANEE" Family.

Name.
Street.
City. State.
With what concern.

Mfrs. Rec., 10-1-14

*Experience No. 1—"Twenty Years' Experience with Unions" Published March 6, 1913.

Experience No. 2—"Will They Stay Tight" Published April 3, 1913.

Experience No. 3—"I Had Concluded To Stop Trying" Published May 1, 1913.

Experience No. 4—"Johnnie On The Spot" Published June 5, 1913.

Experience No. 5—"Kewanees' Never Stick" Published July 3, 1913.

Experience No. 6—"He Cracked His Back" Published August 7, 1913.

Experience No. 7—"Rip 'er Out—Put in 'Kewanee'" Published September 4, 1913.

Experience No. 8—"Rot Out, Never—If You Use 'Kewanee'" Published October 2, 1913.

Experience No. 9—"On A Frosty Morning 'Kewanee' Unions Prevent Cold Fingers" Published November 6, 1913.

Experience No. 10—"Hundreds of Disconnections—One Union" Published December 4, 1913.

Experience No. 11—"There's An Hour's Difference Between These Joints" Published January 1, 1914.

Experience No. 12—"Kewanee' Union Is Equally Good in Hot and Cold Places" Published February 5, 1914.

Experience No. 13—"Twenty-seven Years" Published March 5, 1914.

Experience No. 14—"This Union Went to Work the Year You Were Born, Kiddie" Published April 2, 1914.

Experience No. 15—"How 'Kewanee' Eliminates Shut-Downs" Published May 7, 1914.

Experience No. 16—"Take-Down' Unions or 'Stick' Unions" Published June 4, 1914.

Experience No. 17—"What Is a Mechanic's Time Worth?" Published July 2, 1914.

Experience No. 18—"You Get It All Without a Leak" Published August 6, 1914.

Experience No. 19—"The Union That Pays For Itself Twice" Published September 3, 1914.

Experience No. 20—"Look Out There! Stop!" Published October 1, 1914.

NATIONAL TUBE COMPANY, (Gen'l Sales Offices: FRICK BUILDING) Pittsburgh, Pa.

DISTRICT SALES OFFICES: Atlanta, Boston, Chicago, Denver, Kansas City, New Orleans, New York, Philadelphia, Pittsburgh, Salt Lake City, St. Louis, St. Paul.
PACIFIC COAST REPRESENTATIVES: U. S. STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle.
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Has Always Made Good

Its use means real economy. Much cheaper to buy and install than Cast Iron Pipe. Lasts as long and delivers more water. Durable, economical and efficient. Get full details in catalog

A. Wyckoff & Son Company
ELMIRA, N. Y.

Johnson-Peters Co., Pittsburgh Terminal Warehouse, Pittsburgh, Pa.



Lengths,
6 to 12 feet
Sizes,
1 to 48 inches
diameter

Pressures,
10 to 172 lbs.
Over 50,000
miles in service

STANDARD RE-INFORCED SPIRAL PIPE

Continuous Interlocking Seam Smooth Inside

USED FOR

Water, Air, Exhaust Steam Dredging, Irrigation, Paper and Pulp Mills, Brine Circulation, and suitable for the economical conveyance of any liquid or other substances.

Standard Spiral Pipe Works, 68 W. Monroe Street, Chicago



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Have Bronze to Bronze at the joint — No Corrosion

This construction is embodied in our Flange Elbow, Tee, Male and Female and Air Pump Unions. Ask for circular and sample.

E. M. DART MFG. CO.
PROVIDENCE, R. I.

THE FAIRBANKS CO., Agents
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ASK YOUR DEALER FOR PRICES

TRADE "LEADITE" MARK

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A USER SAYS:

"It gives us pleasure to report the Leadite was very satisfactory and easy to operate, and we would not think of using lead joints for jointing c. i. water mains."

Leadite lessens labor. It fills every crevice from the yarn out to face of bell. No caulking required. The efficient water main joint. Write for booklet Specify Leadite

"Leadite Joints Increase in Strength with Age."

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PHILADELPHIA, PA.

Economy and Efficiency Obtained

BY

Making Your Own Packing

FROM

ULCO LEAD WOOL

For Steam, Hot Water, Gas or Ammonia

A TRIAL WILL CONVINCE

\$1.00 TRIAL PACKAGE by Parcel Post

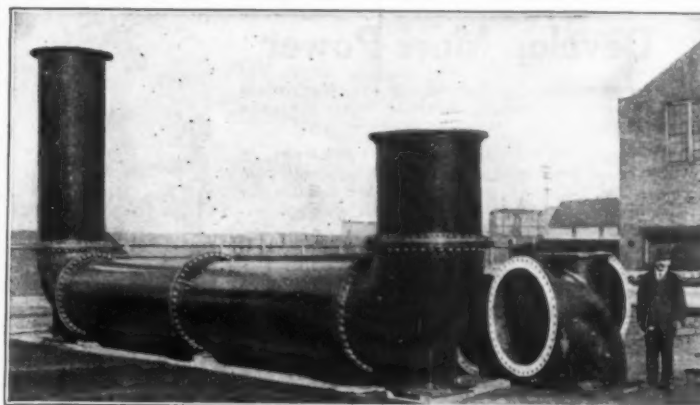
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48-inch Lap Welded Pipe, Forged Steel Flange Connections.
For 26-inch Vacuum.
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We carry every standard size in stock, and can therefore ship without delay any ordinary specification.

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Develop More Power

with a given quantity of water than any other turbine of the same dimensions, operating under the same conditions.

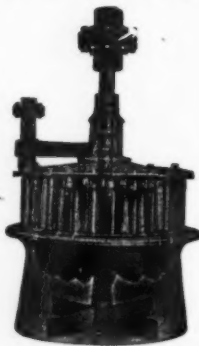
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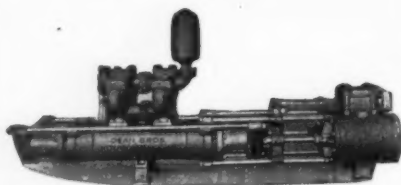
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Duplex Steam Pump, outside end packed,
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Duplex, Electric Driven, gen-
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BUILT IN THE SOUTH
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Over 70 sizes and styles, for drilling
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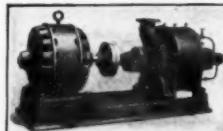
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variety of tools and competent men. Try us on a proposition; yours for the asking.

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With Centrifugal Pumps, whether of the Turbine or
Volute Type, the name of Alberger is a guarantee of
maximum service and minimum operating expense.

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Atlanta, Boston, Chicago, St. Louis, Pittsburgh, San Francisco, New Orleans.

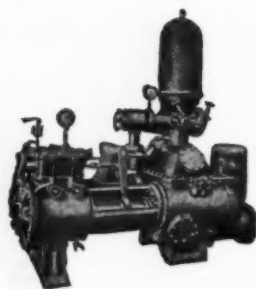
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is a splendid thing, but

Fire Protection Is Better

The first will recoup your property loss,
but a Blake-Knowles Underwriter Fire
Pump will prevent the loss, not only of
your property, but the business you can-
not do while recovering from a fire.

Be protected. Write now for Bulletin
BK 844-29.



The Blake & Knowles Steam Pump Works

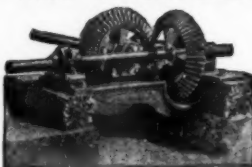
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B166.1

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Reasonable price. Unequalled workmanship.
Made for a variety of purposes, under various
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BALTIMORE, MD.
ENGINEERS FOUNDERS MACHINISTS
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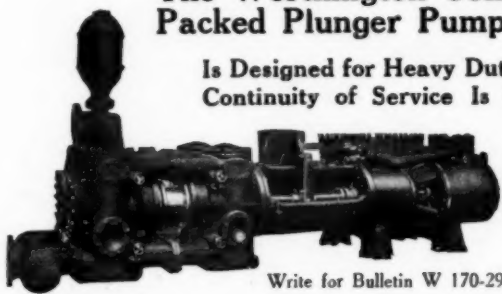
Centrifugal Pumps

ALL SIZES, BELT DRIVEN AND DIRECT CONNECTED

For Irrigation, Tanneries, Mine Drainage, Phosphate Mining, Circulating Water
for Condensers, &c. &c.

The Worthington Compound Packed Plunger Pump

Is Designed for Heavy Duty Where Continuity of Service Is Essential



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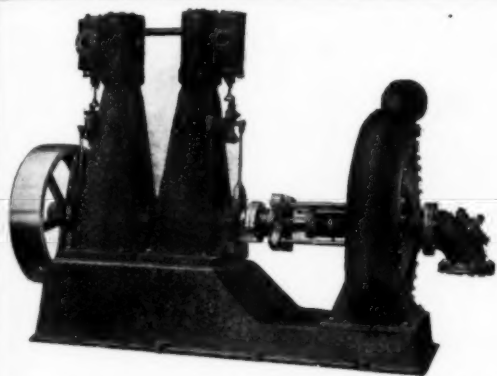
Steam and Electric, Centrifugal and Reciprocating Pumps for All Services

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W197.1



ERIE
HIGH DUTY
Direct
Connected
Sand,
Gravel,
Dredging
Pumps

Are second to none. They give the best of service and in solid steel and exceedingly long life. Better still, every user is a satisfied customer. Bulletin B-30 will tell more about them.

ERIE PUMP & ENGINE WORKS, Erie, Pa.

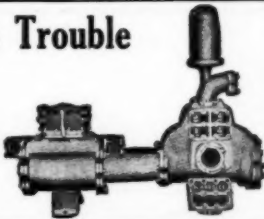
Less Working Parts—Less Trouble

This pump is simplicity itself. It has no valve gear, eliminating levers, small steam ports, packing rings, etc.

BLAKESLEE PUMPS

have fewer working parts than most pumps. They are strong and dependable. Write for Catalogue.

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Solve the Problem of Running Water for Suburban and Country Residences, and Afford a Satisfactory Water Supply for Laundries, Apartment Houses, Factories, etc.

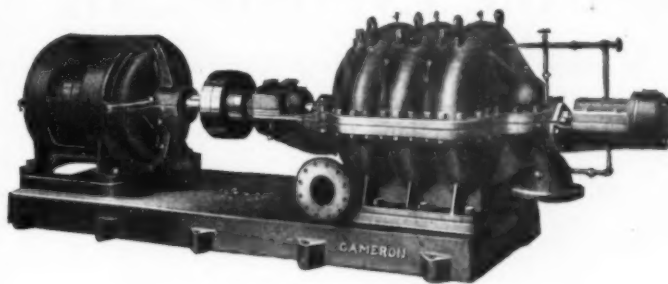
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1000 Gallons Per Minute Against 500 Feet Head

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Mining engineers have found the Cameron Centrifugal to be the best for the long, steady pulls of pumping so prevalent in mine work.

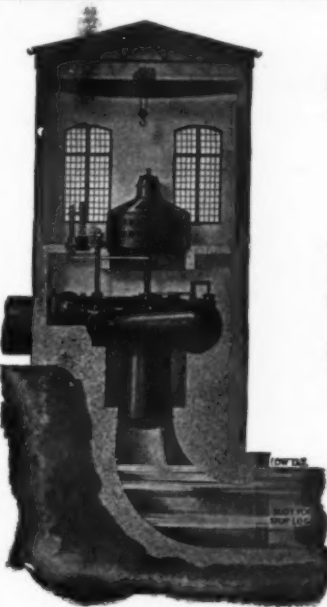
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Built in many types and sizes for various classes of work. Our Engineering Department will gladly figure on your requirements.

Write for Bulletin No. 151 describing our Multi-Stage Centrifugal Pump.

A. S. Cameron Steam Pump Works

11 Broadway, NEW YORK Offices the World Over



90% Efficiency
FROM

Hydraulic Turbines

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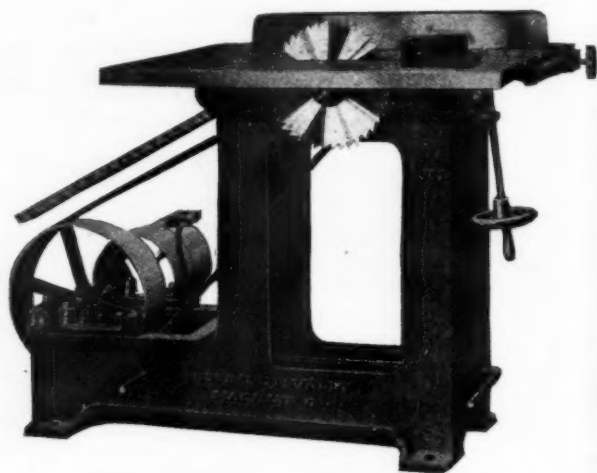
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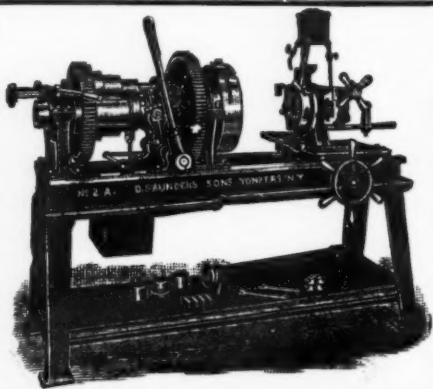
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Machines

All Sizes for Pipe Mills
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This cut shows our 2 A
Improved Pipe Threading,
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Range $\frac{1}{2}$ to 2, inclusive.
Pipe can be gripped or
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chuck, by a simple move-
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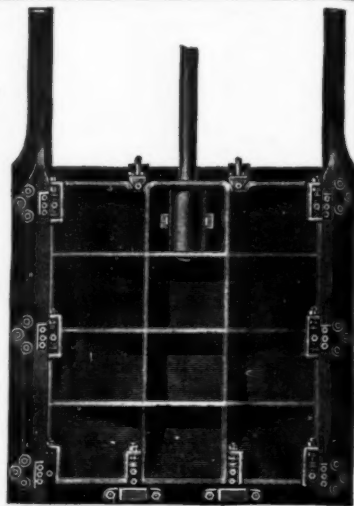


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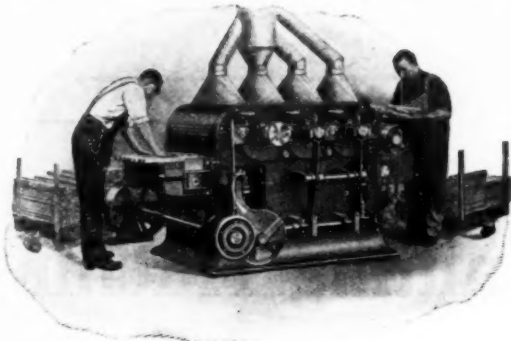
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Woodworking Machinery

Patent Endless Bed Sander



IN OPERATION, SHOWING THAT IT WILL
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WIDE PIECES AT ONE TIME.

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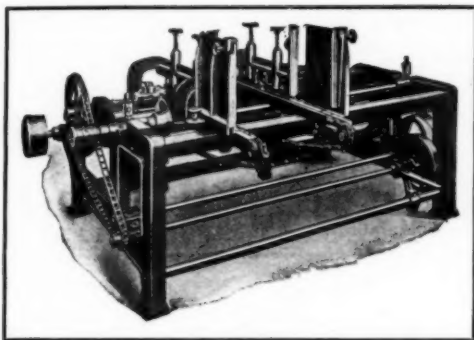
It gives us pleasure to say that it is one of the most satisfactory machines we have in our plant, and we will be glad to have you use us as reference when you care to do so.

Respectfully yours,

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BY *H. B. Helmers Jr.*

HJH jr-MMB

H. B. Smith Machine Co., Smithville, N. J., U. S. A.
New York, Chicago, Atlanta, San Francisco



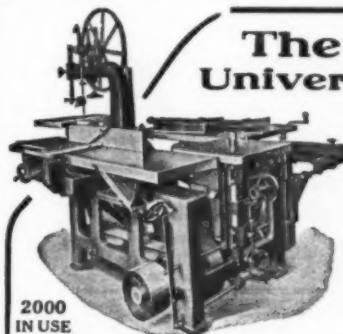
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Easy adjustment. Sent on approval.

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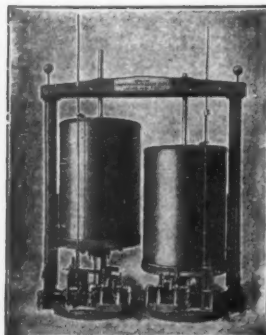
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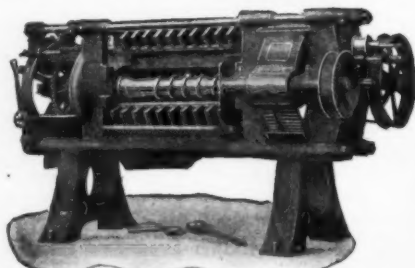
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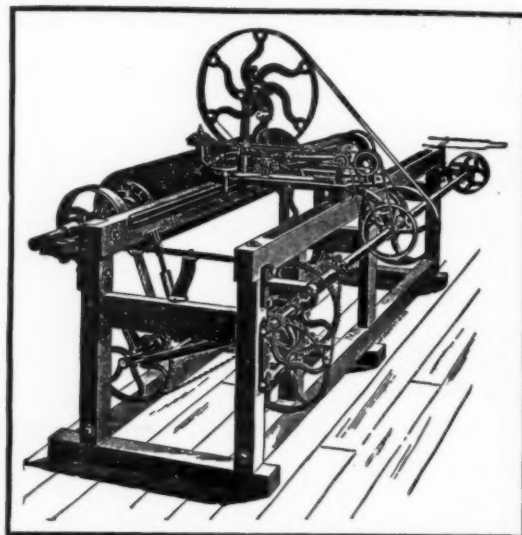
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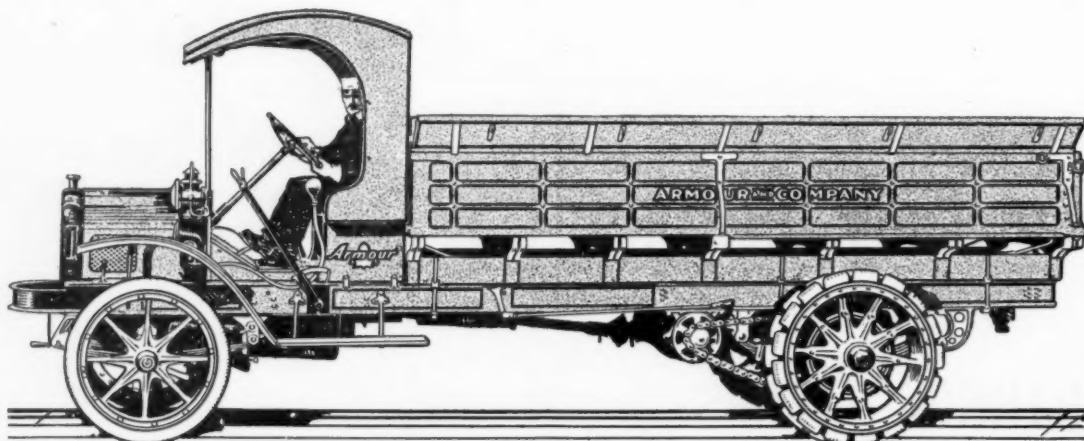


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Hydraulic Press

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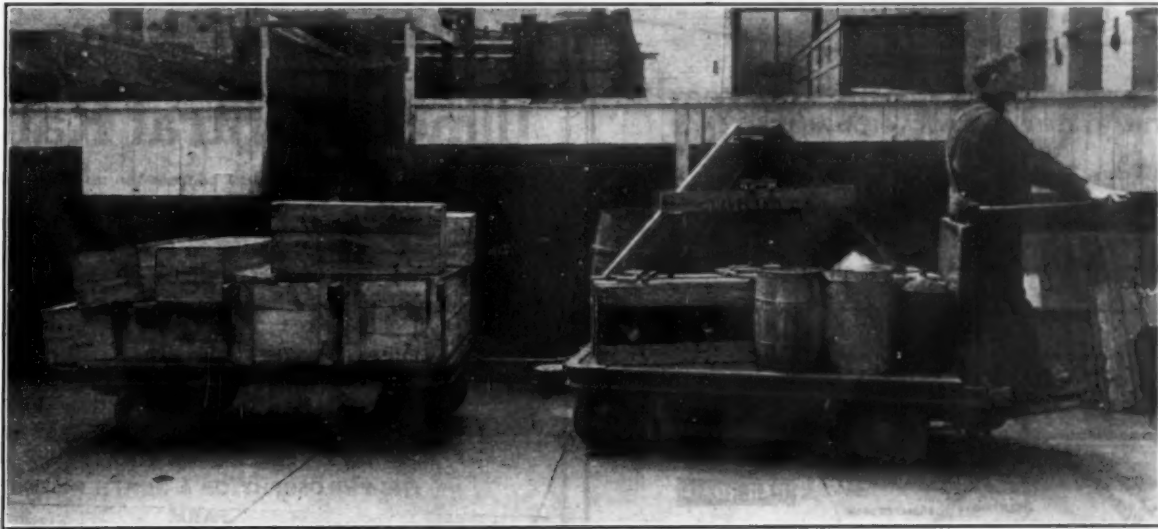
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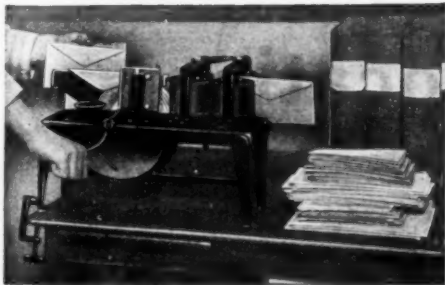
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MANUFACTURER and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and
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ideal.

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occupy advantageous positions for distributing ware-
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Will be glad to confer with
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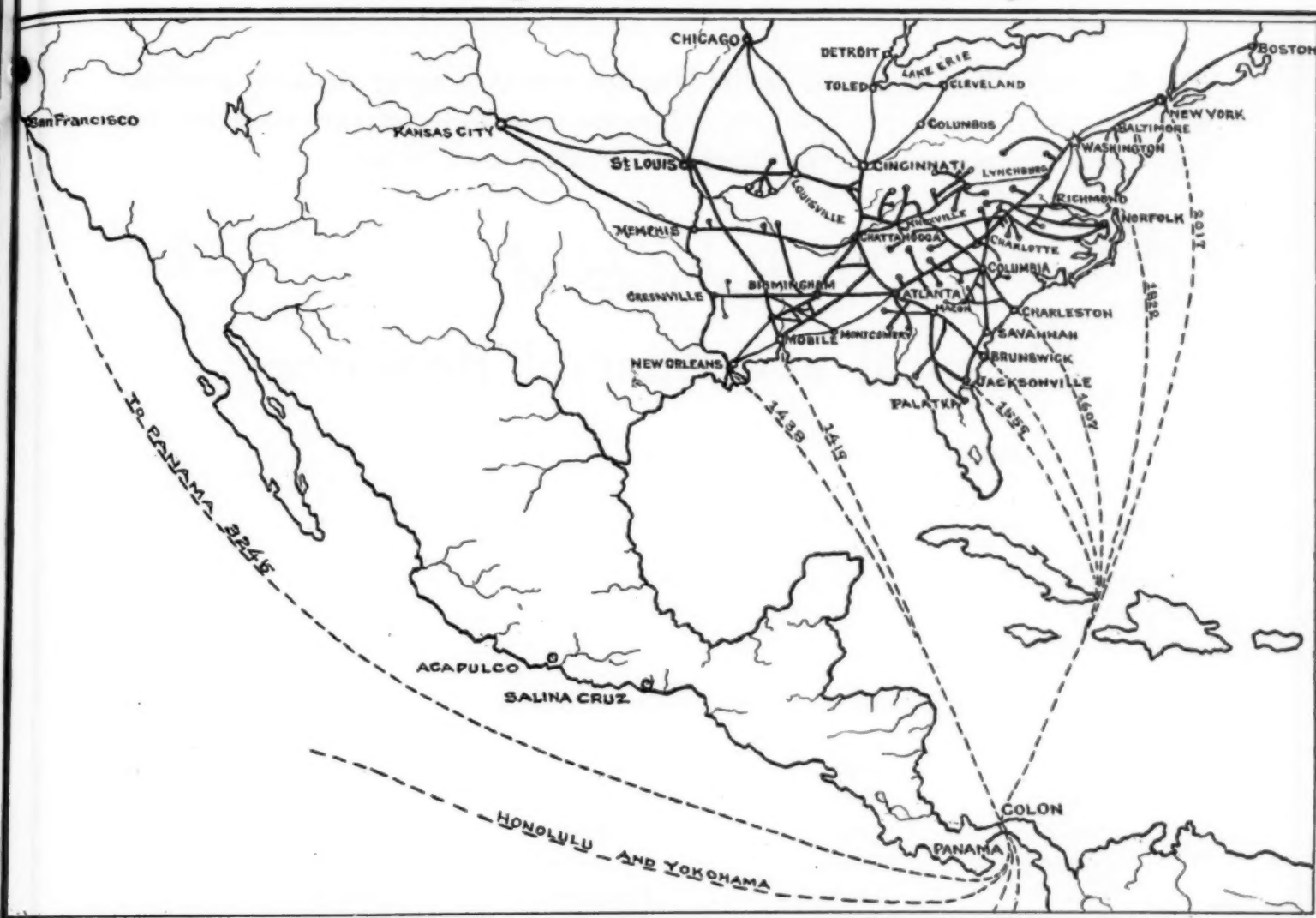
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J. A. PRIDE,

General Industrial Agent

NORFOLK, VIRGINIA

The Map Tells the Story



Get Closer to South American Trade

This is the Southern manufacturer's "psychological moment" to establish himself with the valuable South American and Oriental trade.

Two recent happenings (the European wars and Panama Canal opening) have thrown wide open the doors of Southern American trade to manufacturers of the United States.

The South is the strategic location from which to serve these fast developing South American markets.

Look at this map and be convinced. Mobile is nearer by more than 600 miles to the Panama Canal than is New York City. Other Southern ports have corresponding advantages in distance. Notice the excellent railroad facilities from the large inland cities of the West and South to the South Atlantic Ocean and Gulf ports.

The Ten-Thousand-Mile Railroad System of The Southern Railway Reaches All the Larger Cities of This Resourceful Territory

The greatest supply of *timber* east of the Rocky mountains is to be found in the South. Her *coal* measures and *iron* resources are practically inexhaustible. *Clays* and *earths* of inestimable value are obtainable in every State. The wonderful *hydro-electric developments* of recent years make available over one million

horse-power. Reliable *labor* is plentiful at a very reasonable wage scale; strikes are unknown to this region.

If you want to reduce your manufacturing costs, establish a distributing warehouse or locate in America's most charming home section, give us the opportunity to aid you in selecting a favorable site. Our services are given without charge.

Virginia	Alabama
N. & S. Carolina	Mississippi
Georgia	Tennessee
Florida	Kentucky

M. V. RICHARDS
Land and Industrial Agent
Room 52 Washington, D. C.

Southern Railway
Mobile & Ohio R. R.
Georgia, Southern & Fla. Ry.
Virginia & Southwestern Ry.

The European War by greatly diminishing the supply of many chemical products needed by industries of America, emphasizes the importance of raw materials for varied chemical plants along the Clinchfield, which is justly called

A Railway of Chemical and Mineral Resources

Nature has been lavish along the line of this railway, and the wide distribution and superior quality of the minerals in the Clinchfield territory give promise of ample returns to those who will develop and fabricate these products for the use of man.

Their value to the Arts and Manufactures can be easily established and their application in many industries awaits the progressive factor who recognizes the future supremacy that is rapidly coming to the Industrial South.

The Clinchfield territory contains the following minerals which can be developed profitably:

Kaolin	Talc	Slate	Limestone
Marble	Mica	Rutile	Soapstone
Quartz	Zinc	Asbestos	Silica Sand
Barytes	Coal	Chromite	Manganese
Bauxite	Lead	Dolomite	Soda Feldspar
Tripoli	Ochre	Monazite	Potash Feldspar

Some of these may be suitable to your industry.

Perhaps you are seeking a better and cheaper source of some of the above materials, raw or prepared.

Or an expansion of your present business by establishing a plant in the South.

Or a location for a new industry which gives promise of a large and progressive market.

Excellent transportation facilities, ideal climate and good labor conditions, abundance of raw materials, cheap fuel, water-powers and low freight rates combine to present the attractive advantages offered in the Clinchfield territory.

Manufacturers and investors will be given every opportunity and assistance in the investigation of the mineral resources along this railroad.

Carolina, Clinchfield & Ohio Rwy.

"THE ROAD OF OPPORTUNITY"

R. F. BREWER, Industrial Agent

Johnson City, Tenn.

The American Farmer's Great Opportunity

In the States traversed by the Baltimore & Ohio there is produced 1-3 of all the corn in the Union; 1-3 of the oats; 1-7 of the wheat; 1-2 of the buckwheat; 1-4 of the hay; about 1-3 of the meats, and about 80% of the apples for the whole country.

The European war, which is devastating large areas of farm lands and drawing the tillers of soil away from their work, is bound to bring a great demand for American food products.

The American farmer could easily increase his production of foodstuffs ten or fifteen per cent. by more intensive cultivation, which would add a revenue of \$1,000,000,000 or more to their income.

There is yet time for the farmers of the States traversed by the Baltimore & Ohio, as well as by others, to sow a large increase of wheat and winter oat acreage. Fall plowing and winter plowing should be set about actively and abundant seed corn and seed potatoes laid by for the coming spring.

If these things are done it will be easy for the States traversed by the Baltimore & Ohio to increase the actual wealth of the country next year at least one-third of a billion dollars.

The American farmer has an opportunity before him, the performance of which will mean not only great profit to himself, but greater prosperity to his country.

Investors in farm lands, business men who seek the possibilities in farming and farmers looking for new locations will find it advantageous to investigate the Baltimore & Ohio territory.

Baltimore & Ohio Railroad

J. H. STEWART, Agricultural Agent

Morgantown, W. Va.

W. W. WOOD, Industrial Agent

Baltimore, Md.

All Crops Yielding High Prices per Acre are Grown in FLORIDA

The biggest opportunity before the American farmer now is the raising of food products.

The temporary decrease in the demand for cotton, brought about by the European war, is paralleled by the certainty of an increase in demand for foodstuffs in the immediate future.

The world naturally looks to America to supply the deficiency of foodstuffs, and especially to those parts of America where diversified crops can be grown to best advantage.

The following table, based upon figures of the United States Department of Agriculture, strikingly emphasizes Florida's complete advantages of soil and climate for raising a wide range of crops that yield the highest price per acre:

AVERAGE CROP VALUE PER ACRE.			
Crop.	Acreage.	Value.	Value per acre
Cotton	36,011,000	\$887,350,000	\$24 64
Corn	105,820,000	1,692,092,000	15 99
Wheat	50,184,000	610,122,000	12 15
Hay	48,954,000	797,077,000	16 28
Oats	38,399,000	439,596,000	11 45
Barley	7,499,000	95,731,000	12 76
Orchard fruits.....	4,000,000	140,867,000	35 23
Irish potatoes.....	3,668,000	227,903,000	62 13
Garden vegetables.....	2,763,000	216,257,000	78 19
Rye	2,557,000	26,220,000	10 25
Flaxseed	2,291,000	21,399,000	9 34
Tobacco	1,216,000	122,481,000	101 55
Peanuts	870,000	18,272,000	21 00
Rice	827,000	22,090,000	26 70
Buckwheat	805,000	10,445,000	12 97
Sweet potatoes.....	625,000	42,884,000	68 61
Sugar beets.....	577,000	34,420,000	59 65
Citrus fruits.....	275,000	23,000,000	83 64
Small fruits.....	272,000	29,974,000	110 19
Sugar-cane	248,000	21,000,000	84 68
Total	307,861,000	\$5,479,180,000	\$17 79

Study this table carefully.

You will note that all the high values per acre are of crops that produce abundantly in Florida.

Corn	Hay	Irish Potatoes	Tobacco	Sugar Cane	Citrus Fruits
Cotton	Rice	Garden Vegetables	Peanuts	Sweet Potatoes	Small Fruits

Crops in Florida mature earlier than elsewhere, giving this State the advantage of higher prices that come to products first reaching the market.

All along the East Coast of Florida, from Jacksonville down, are splendid opportunities for the farmer to raise these profitable crops, and any information desired will be gladly furnished.

FLORIDA EAST COAST RAILWAY

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

WINTERTIME IN THE SOUTH

This period in many other sections means cold, disagreeable weather conditions, keeping you indoors. Down South you can find a succession of bright, crisp, sunshiny days, which make your sojourn a delight.

The Pine Hill Belt—South Pines, Pinehurst—so readily reached—had January past, weather as quoted: 24 wholly clear days, 3 partly clear, making 27 sunshine days. Only 4 days out of 31 cloudy. On 25 days the mercury went above 50, on 9 days above 60 and on 4 days 70 and above. The lowest for the month was 44.

Camden—Columbia, South Carolina, are in this attractive health belt. The deep sandy soil takes up the rainfall, and the bright sunshine out-of-door weather is in the majority.

Savannah, Ga., offers many alluring resorts along its coast, peculiarly so to the huntsman, who can find secluded islands and areas which abound with game. Unusually mild winters, the mean temperature being 52 degrees for December, January and February.

Around Wilmington, N. C., are many of these delightful winter season islands. Palmetto Island is 3½ miles long and 2½ miles wide, comprising 65,000 acres. Adjacent is another area of 57,000 acres. It's stated locally that Palmetto Island has had no frost in several years.

Consider these in making your plans for outdoor life this winter.

Golfing, Horseback Riding, Automobiling, Shooting, Canoeing.

SEABOARD AIR LINE RAILWAY

The Progressive Railway of the South

J. A. PRIDE, General Industrial Agent

NORFOLK, VIRGINIA

- Abrasive Materials.**
Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.
- Accountants.**
Baltimore Audit Co., Baltimore, Md.
Beaman, R. J., Cincinnati, Ohio.
- Accumulator. (Hydraulic.)**
The French Oil Mill Mfg. Co., Piqua, Ohio.
- Acetylene Service.**
Frost-O-Lite Co., Inc., The Indianapolis, Ind.
- Adding Machines.**
Burroughs Adding Machine Co., Detroit, Mich.
- Agricultural implements.**
Myers & Bro., E. E., Ashland, O.
- Air Compressors. (Stationary and Portable.)**
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
American Compressor & Pump Co., Baltimore, Md.
Chicago Pneumatic Tool Co., Chicago, Ill.
Clayton Air Compressor Works, Cambridge, Mass.
General Electric Co., Schenectady, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Laidlaw-Dunn-Gordon Co., Cincinnati, Ohio.
Union Steam Pump Co., Battle Creek, Mich.
- Aluminum Products. (Bars, Sheets, Tubes.)**
Aluminum Company of America, Pittsburgh, Pa.
- Ammonia Valves and Fittings.**
Frick Co., The, Waynesboro, Pa.
York Mfg. Co., York, Pa.
- Anti-Friction Metals.**
Bailey-Lebby Co., Charleston, S. C.
Dodge Mfg. Co., Milwaukee, Ind.
- Architects.**
Diehl, Wm. Newton, Norfolk, Va.
Gatlin, W. R., Hopkinsville, Ky.
Hunt, R. H., Chattanooga, Tenn.
Milburn, Heister & Co., Washington, D. C.
Robinson, W. F., Greensboro, N. C.
Sims, J. E., Greenville, S. C.
- Architects' Supplies.**
Starrett Co., L. S., Athol, Mass.
Webster & Co., Philadelphia, Pa.
- Architectural Iron Work.**
Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Schreiber & Sons Co., The L., Cincinnati, O.
Snead Architectural Iron Wks., Louisville, Ky.
- Arc Lamps. (See Lamps) [Arc and Incandescent.]**
- Art Glass.**
Hinswanger & Co., Memphis, Tenn.
- Asbestos.**
Asbestos Protected Metal Co., Beaver Falls, Pa.
Johns-Manville Co., H. W., New York, N. Y.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
- Asbestos Products.**
Asbestos Protected Metal Co., Beaver Falls, Pa.
- Asphalt.**
Barber Asphalt Paving Co., Philadelphia, Pa.
Gulf Refining Co., Pittsburgh, Pa.
U. S. Asphalt Refining Co., New York, N. Y.
- Asphalt Mixers.**
Erie Machine Shops, Erie, Pa.
- Asphalt Paving Plants.**
Gummer & Son Co., F. D., The, Cleveland, Ohio.
- Auctioneers.**
Freeman & Co., Samuel T., Philadelphia, Pa.
- Automobiles. (Electric Passenger.)**
General Vehicle Co., Long Island City, N. Y.
- Automobiles. (Second Hand.)**
Mar-Dei Mobile Co., Baltimore, Md.
- Axles. (See Car Wheels, Axles and Trucks.)**
- Babbit Metal. [See Anti-Friction Metal.]**
- Bakelite Dielect.**
Continental Fibre Co., Newark, Del.
- Bankers and Brokers.**
Delaware Trust Co., Wilmington, Del.
Electric Bond & Share Co., New York, N. Y.
Halsey & Co., N. W., New York, N. Y.
Mercantile Trust & Deposit Co., Balt., Md.
New First National Bank, Columbus, O.
Nye & Co., John, Chicago, Ill.
Peabody, Houghteling & Co., Chicago, Ill.
Southern States Development Co., New York, N. Y.
- Banks.**
First National Bank, Baltimore, Md.
First Nat'l Bank of Key West, Key West, Fla.
First National Bank, Richmond, Va.
Merchants-Mechanics' Nat'l Bank, Baltimore, Md.
New First National Bank, Columbus, Ohio.
National Exchange Bank, Baltimore, Md.
Provident Savings Bank & Trust Co., Cincinnati, O.
- Bank and Office Railings and Grilles. (Iron)**
Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Haggard & Co., Baltimore, Md.
Meyers Mfg. Co., F. J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
- Barges.**
American Bridge Co., of New York, N. Y.
- Bar Iron. (Refined and Galvanized.)**
Bourne-Fuller Co., The, Cleveland, Ohio.
Carnegie Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
- Bars. (Merchant Rounds.)**
Gulf States Steel Co., Birmingham, Ala.
- Bars, Wire, Wire Fabric, etc. (For Reinforced Concrete.)**
American Steel & Wire Co., Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Laclede Steel Co., St. Louis, Mo.
Trussed Concrete Steel Co., Youngstown, O.
- Bead. (Metal Corner.)**
Penn Metal Co., Boston, Mass.
- Bearings. (Oilless.)**
Metaline Co., Long Island City, N. Y.
- Bedford Stone**
Bedford Steam Stone Works, Bedford, Ind.
- Bells and Gongs.**
National Tube Co., Pittsburgh, Pa.
- Belting. (Leather, Canvas, Rubber.)**
American Supply Co., Providence, R. I.
Bailey-Lebby Co., Charleston, S. C.
Baltimore Belting Co., Baltimore, Md.
Cameron & Barker Co., Charleston, S. C.
Chesapeake Belting Co., Baltimore, Md.
Druid Oak Belting Co., Inc., Baltimore, Md.
Gandy Belting Co., Baltimore, Md.
Goodyear Tire & Rubber Co., Akron, Ohio.
Graton & Knight Mfg. Co., Worcester, Mass.
Main Belting Co., Phila., Pa.
- Belting. (Chain.)**
Schieren Co., Chas. A., New York, N. Y.
Smith-Courtney Co., Richmond, Va.
- Belting. (Chain.)**
Hartlett & Snow Co., C. O., Cleveland, O.
Calwell & Sons Co., H. W., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicotown, (Philadelphia) Pa.
- Belt Cement.**
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Conveyors.**
Jeffrey Mfg. Co., Columbus, O.
- Belt Dressing.**
Dixon Crucible Co., Joseph, Jersey City, N. J.
Gandy Belting Co., Baltimore, Md.
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing. (Leather.)**
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing and Supplies. [See Belting. Leather, Canvas, Rubber.]**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**
Church & Dwight Co., New York, N. Y.
- Billets.**
Gulf States Steel Co., Birmingham, Ala.
- Bins (Steel)**
Merritt & Co., Camden, N. J.
- Blackboards. (Slate.)**
East Bangor Co., Slate Co., The, East Bangor, Pa.
Johnson, E. J., New York, N. Y.
- Blocks. (Paving Grooved.)**
American Concrete Works, New Orleans, La.
- Block Fillers**
Barber Asphalt Paving Co., Phila. Pa.
Hartlett Mfg. Co., Phila. Pa.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
- Blowers and Exhaust Fans.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Green Fuel Economizer Co., Mattawan, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Blow Torches. (For Soldering and Brazing.)**
Pre-T-O-Lite Co., Inc., The, Indianapolis, Ind.
- Bluing Ovens.**
Oven Equipment & Mfg. Co., The, New Haven, Conn.
- Boilers.**
Habeck & Wilcox Co., New York, N. Y.
Cameron & Barker Co., Charleston, S. C.
Casey-Hedgess Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cotterville Boiler Works, Chattanooga, Tenn.
Cole Mfg. Co., R. D., Newnan, Ga.
Erie City Iron Works, Erie, Pa.
Gibbs Machinery Co., Inc., Columbia, S. C.
Harris Bros. Co., Chicago, Ill.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Keystone Boiler & Foundry Co., Columbia, Pa.
Lanokout Boiler & Mfg. Co., Chattanooga, Tenn.
Lombard Iron Works, Augusta, Ga.
Meeklenburg Iron Works, Charlotte, N. C.
Murray Iron Works, Burlington, Ia.
New York Central Iron Works, Hagerstown, Md.
Phoenix Iron Works Co., Meadville, Pa.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Works, Jackson, Tenn.
Valk & Murdoch Iron Works, Charleston, S. C.
Vost Machine Co., Henry, Louisville, Ky.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.
Zelnicker Supply Co., Walter A., St. Louis, Mo.
- Boiler Covering.**
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
- Boiler Graphite.**
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Boiler Tubes. [See Tubes, Boiler.]**
- Bolts, Nuts, Rivets, Studs and Washers.**
Lebanon Valley Iron & Steel Co., Lebanon, Pa.
Progressive Mfg. Co., Torrington, Conn.
Republic Iron & Steel Co., Youngstown, O.
Upson Nut Co., The, Cleveland, O.
- Bonds. (Surety, etc.)**
Fidelity & Deposit Co. of Balt., Baltimore, Md.
- Bottling Outfits.**
Vilter Mfg. Co., Milwaukee, Wis.
- Brass Goods.**
Bailey-Lebby Co., Charleston, S. C.
Buckeye Iron & Brass Works, Dayton, O.
Lunkenheimer Co., The, Cincinnati, Ohio.
Powell Co., Wm., Cincinnati, O.
- Brass Railing and Grilles.**
Newman Mfg. Co., Cincinnati, Ohio
- Brewers' Machinery.**
Vilter Mfg. Co., Milwaukee, Wis.
- Brick. (Acid.)**
Hood Brick Co., B. Mifflin, Atlanta, Ga.
- Brick. (Building.)**
Adamantine Clay Products Co., North Mountain, W. Va.
Am. Enamelled Brick & Tile Co., New York, N. Y.
Dixie Brick & Tile Co., Peryear, Tenn.
Hood Brick Co., B. Mifflin, Atlanta, Ga.
Hydraulic Press Brick Co., St. Louis, Mo.
Kingsport Brick Corp., Johnson City, Tenn.
Scott Brick Co., Alex. A., Knoxville, Tenn.
Southern Face Brick Exchange, Birmingham, Ala.
Standard Brick Co., Macon, Ga.
- Brick. (Enamelled.)**
Am. Enamelled Brick & Tile Co., New York, N. Y.
- Brick. (Fire.)**
Dixie Brick & Tile Co., Peryear, Tenn.
Harrison-Walker Refractories Co., Pittsburgh, Pa.
Kilian Fireproofing & Brick Works, Kilian, S. C.
Louisville Fire Brick Works, Highland Park, Ky.
Mexico Brick & Fire Clay Co., Mexico, Mo.
Pomona Terra-Cotta Co., Pomona, N. O.
Standard Brick Co., Macon, Ga.
Stevens' Sons Co., H., Macon, Ga.
Union Mining Co., Mt. Savage, Md.
- Brick. (Magnesia.)**
Harrison-Walker Refractories Co., Pittsburgh, Pa.
- Brick. (Paving.)**
Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingis Shale Brick Co., Birmingham, Ala.
Dixie Wire-Cut-Log Brick Co., Gonsant, Ohio.
Southern Clay Mfg. Co., Chattanooga, Tenn.
Standard Brick Co., Macon, Ga.
- Brick. (Silica.)**
Dixie Brick & Tile Co., Peryear, Tenn.
Harrison-Walker Refractories Co., Pittsburgh, Pa.
- Brick and Clayworking Machinery and Supplies.**
Chase Fdry. & Mfg. Co., Columbus, O.
Fernholz Brick Machinery Co., St. Louis, Mo.
Freese & Co., E. M., Gallon, O.
Steele & Sons, J. O., Statesville, N. C.
- Bridges. (Concrete.)**
Luten, Daniel B., Indianapolis, Ind.
Requarth Co., O. W., Charlotte, N. C.
Turner, O. A. P., Minneapolis, Minn.
- Bridges. (Rolling Lift.)**
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
- Bridges. (Steel.)**
American Bridge Co. of New York, N. Y.
Austin Bros., Atlanta, Ga.
Belmont Iron Works, Philadelphia, Pa.
Champion Bridge Co., Wilmington, Ohio.
Chicago Bridge & Iron Works, Chicago, Ill.
East St. Louis Bridge Co., East St. Louis, Ill.
Oregon Bridge Co., Lebanon, Ohio.
Richmond Structural Steel Co., Richmond, Va.
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.
- Bridge and Structural Iron Paints.**
Chattanooga Paint Co., Chattanooga, Tenn.
- Brimstone.**
Union Sulphur Co., New York, N. Y.
- Brushes.**
Felton Brush Co., D. D., The, Atlanta, Ga.
- Buckets. (Bottom-dumping for Concrete, Fertilizer, etc.)**
Stuebner Iron Works, G. L., Long Island City, N. Y.
- Buckets. (Clam Shell, Orange Peel, etc.)**
Hayward Company, New York, N. Y.
Williams Company, G. H., Cleveland, Ohio.
- Buckets. (Dredging, Excavating, Sewer, etc.)**
Hayward Co., New York, N. Y.
Monaghan Mch. Co., Chicago, Ill.
Williams Co., The G. H., Cleveland, O.
- Buckets. (Grab.)**
Hunt Co., Inc., C. W., West New Brighton, N. Y.
- Buckets. (Ore Handling.)**
Caldwell & Son Co., H. W., Chicago, Ill.
Hayward Co., New York, N. Y.
Link-Belt Co., Nicotown (Philadelphia), Pa.
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**
Starr Co., B. F., Baltimore, Md.
- Builders and Contractors.**
Austin Bros., Atlanta, Ga.
Candwell-Wingate Co., Atlanta, Ga.
Selden-Breck Construction Co., St. Louis, Mo.
Stone & Webster Eng. Corp., Boston, Mass.
Turner, O. A. P., Minneapolis, Minn.
White Companies, J. G., New York, N. Y.
- Building Stone.**
Bedford Steam Stone Works, Bedford, Ind.
- Building Supplies.**
Harris Bros. Co., Chicago, Ill.
Southern Building Material Co., Norfolk, Va.
- Burners. (Enclosed Flame Case.)**
Oven Equipment & Mfg. Co., The, New Haven, Conn.
- Burners. (Oil.) [See Fuel Oil Equipments.]**
- Bushings. (Oilless, for Loose Pulleys.)**
Metaline Co., Long Island City, N. Y.
- Cables.**
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Consolidated Tramway Co., New York, N. Y.
Flory Mfg. Co., S., Bangor, Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Roebbing's Sons Co., John A., Trenton, N. J.
- Cables. (Underground.)**
American Steel & Wire Co., Chicago, Ill.
- Cables and Wires. (Insulated.)**
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cables and Wires. (Insulated.)**
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cableways. (Overhead Suspension.)**
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Consolidated Tramway Co., New York, N. Y.
Flory Mfg. Co., S., Bangor, Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Roebbing's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin)**
Blies Co., E. W., Brooklyn, N. Y.
- Canning Machinery and Supplies.**
Robins & Co., A. K., Baltimore, Md.
Sprague Canning Machinery Co., Chicago, Ill.
- Caps. (Roofing.)**
Robertson Steel & Iron Co., W. F., Cincinnati, O.
- Carborundum Paper and Cloth.**
Carborundum Co., Niagara Falls, N. Y.
- Cars. (Dump, Industrial, Logging and Mine.)**
Austin Mfg. Co., Chicago, Ill.
Chase Fdry. & Mfg. Co., Columbus, O.
Curd, Geo. B., Cincinnati, Ohio.
Easton Car & Construction Co., Easton, Pa.
Electric Wheel Co., Quincy, Ill.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hunt Co., C. W., Inc., West New Brighton, N. Y.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Western Wheelbarrow Co., Aurora, Ill.
- Cars. (Motor, Gasoline.)**
White Co., The, Cleveland, Ohio.
- Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]**
- Car Wheels, Axles and Trucks.**
Carnegie Steel Co., Pittsburgh, Pa.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
- Cast Iron Pipe. (See Pipe.) [Cast Iron]**
- Castings. (Aluminum.)**
Aluminum Company of America, Pittsburgh, Pa.
- Castings. (Brass and Bronze.)**
McKenna Bros. Brass Co., Pittsburgh, Pa.
Triumph Electric Co., Cincinnati, O.
- Castings. (Gray Iron.)**
Columbian Iron Works, Chattanooga, Tenn.
Georgia Car & Locomotive Co., Atlanta, Ga.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Lynchburg Foundry Co., Lynchburg, Va.
Phoenix Iron Works Co., Newville, Pa.
Pope Engineering & Machine Co., Baltimore, Md.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Valk & Murdoch Iron Works, Charleston, S. C.
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**
Columbus Malleable Iron Co., Columbus, Ohio.
General Malleable Co., Warren, O.
Marion Malleable Iron Works, The, Marion, Ind.
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Municipal.)**
Chickasaw Iron Work, Memphis, Tenn.
- Castings. (Steel.)**
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Phoenix Iron Works Co., Meadville, Pa.
Riverside Steel Casting Co., Newark, N. J.
- Ceilings. (Metal.)**
Edwards Manufacturing Co., Cincinnati, O.
Keighley Metal Cell. & Mfg. Co., S., Pittsburgh, Pa.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.
Moesch-Edwards Corrugating Co., Covington, Ky.
- Cement**
Climchfield Portland Cem. Corp., Kingsport, Tenn.
Dixie Portland Cement Co., Chattanooga, Tenn.
Hartman Cement Co., Wm. G., Philadelphia, Pa.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Kosmos Portland Cement Co., Inc., Louisville, Ky.
Lehigh Portland Cement Co., Allentown, Pa.
Security Cement & Lime Co., Hagerstown, Md.
Southern Portland Cement Co., Rockmart, Ga.
Standard Portland Cement Co., Leeds, Ala.
- Cement Machinery.**
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Aising Engineering Co., J. R., New York, N. Y.
Power & Mining Machinery Co., Cudahy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Central American Trade.**
El Comercio, New York, N. Y.
- Chains. (Dredge, Quarry, Steam Shovel.)**
Welmer Chain & Iron Co., Lebanon, Pa.
- Chemists. (Analytical and Consulting.)**
Davis, Geo. C., Philadelphia, Pa.
Froehling & Robertson, Richmond, Va.
Hunt & Co., Robt. W., Chicago, Ill.
Pittsburgh Testing Laboratory, Pittsburgh, Pa.
Wiley & Co., Baltimore, Md.
- Chloride Accumulator.**
Electric Storage Battery Co., The, Philadelphia, Pa.
- Chucks.**
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Cities and Towns. (Commercial and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]**
- Clamps. (For Concrete Forms.)**
Sterling Wheelbarrow Co., Milwaukee, Wis.
- Clayworking Machinery. [See Brick and Clayworking Machinery and Supplies.]**
- Cleansing Compound. (Floors, Etc.)**
India Alkali Works, Boston, Mass.
- Clocks. (Watchman.)**
Watchman's Clock & Supply Co., New York, N. Y.
- Clutches. (Friction.)**
Medart Patent Pulley Co., St. Louis, Mo.
Moore & White Co., The, Philadelphia, Pa.
- Coal.**
Climchfield Coal Corp., Dante, Va.
Climchfield Fuel Co., Spartanburg, S. C.
Consolidation Coal Co., Inc., New York, N. Y.
Tennessee Coal, Iron & R. R. Co., B'ham, Ala.
- Coal Cutters.**
Jeffrey Mfg. Co., Columbus, O.
- Coal Handling Machinery.**
Hartlett & Snow Co., C. O., Cleveland, O.
Guarantee Construction Co., New York, N. Y.
Hayward Co., New York, N. Y.
Hunt Co., C. W., Inc., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicotown (Philadelphia), Pa.
Stuebner Iron Works, G. L., Long Island City, N. Y.
Weller Mfg. Co., Chicago, Ill.
- Coal Tar and By-Products.**
Barrett Mfg. Co., Philadelphia, Pa.
- Coal Tipples.**
American Bridge Co. of New York, N. Y.
- Coke.**
Tennessee Coal, Iron & R. R. Co., B'ham, Ala.
- Colleges and Schools.**
Rensselaer Polytechnic Institute, Troy, N. Y.
- Colleges. (Technical.)**
Rensselaer Polytechnic Institute, Troy, N. Y.
- Columns. (Porch, Interior, Pergola.)**
Nickerson Mfg. Co., Knoxville, Tenn.
- Concrete Construction. (Reinforced.)**
Berry-Fortune Construction Co., Easton, Ga.
Foster-Bell-Gould Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Requarth Co., O. W., Charlotte, N. C.
Trussed Concrete Steel Co., Youngstown, O.
Turner, O. A. P., Minneapolis, Minn.
- Concrete Products.**
Gray Concrete Co., Thomasville, N. C.
- Concrete Curb Protector. (Steel.)**
Steel Protected Concrete Co., Philadelphia, Pa.
- Concrete Mixers. [See Mixers. (Concrete)]**
- Concrete Reinforcing Bars.**
Bourne-Fuller Co., The, Cleveland, Ohio.
Carnegie Steel Co., Pittsburgh, Pa.
Gulf States Steel Co., Birmingham, Ala.
Hoffman & Co., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Laclede Steel Co., St. Louis, Mo.
Reinhold Iron & Steel Co., Youngstown, O.
Sweet's Steel Co., Williamsport, Pa.
Trussed Concrete Steel Co., Youngstown, O.
- Concrete Reinforcing Bar Couplings.**
Marion Malleable Iron Works, Marion, Ind.
- Concrete Reinforcing Wire and Wire Fabric.**
Roebbing's Sons Co., John A., Trenton, N. J.
- Condensers.**
Alberger Pump & Condenser Co., New York, N. Y.
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Crescent-Morris Co., Philadelphia, Pa.
Dean Bros., Steam Pump Wks., Indianapolis, Ind.
Westinghouse Machine Co., Pittsburgh, Pa.
York Mfg. Co., York, Pa.
- Conductor Pipe.**
Edwards Mfg. Co., Cincinnati, O.
Humes Co., O. G., Pittsburgh, Pa.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
- Contractors. (Concrete.)**
Berry-Fortune Construction Co., Easton, Ga.

- Contractors (Drainage)**
Thompson & Mosley, Greensboro, N. C.
- Contractors. (Hydro-Electric Developments.)**
Requarth Co., O. W., Charlotte, N. C.
- Contractors. (Water Supply.)**
Layne & Bowler Co., Houston, Tex.
- Contractors' Machinery and Supplies.** [See also Hoisting Machinery.]
American Clay Machinery Co., The, Bucyrus, Ohio.
American Hoist & Derrick Co., St. Paul, Minn.
Austin Mfg. Co., Chicago, Ill.
Beverly Mach. Co., The John F., Ravenna, O.
Contractors' Service Co., New York, N. Y.
Cord, Geo. H., Cincinnati, O.
Flory Mfg. Co., S., Bangor, Pa.
Grady Bros. Steel & Rail Co., Pittsburgh, Pa.
Harris Metal & Supply Co., New York, N. Y.
Hilburn Co., Alex. N., Baltimore, Md.
Monaghan Mch. Co., Chicago, Ill.
National Hoisting Engine Co., Harrison, N. J.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Pipe & Contractors' Supply Co., New York, N. Y.
Shawwood, E. C., New York, N. Y.
Sterling Machinery Co., New York, N. Y.
- Conveying and Elevating Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
Caldwell & Son Co., H. W., Chicago, Ill.
Consolidated Tramway Co., New York, N. Y.
Flory Mfg. Co., S., Bangor, Pa.
Guarantee Construction Co., New York, N. Y.
Hunt Co., C. W., Inc., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Co., Nicetown, (Philadelphia) Pa.
Mathews Gravity Carrier Co., Ellwood City, Pa.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Weller Mfg. Co., Chicago, Ill.
- Cooperage Stock and Box Shook Machinery.**
Gerlich Co., Peter, Cleveland, O.
- Coppersmiths.**
Hoffman-Abiers Co., Cincinnati, Ohio.
McMillan Bros., Jacksonville, Fla.
- Cordage.**
Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Watersbury Co., New York, N. Y.
- Core Ovens.**
Oven Equipment & Mfg. Co., The, New Haven, Conn.
- Corn Mill Machinery.**
Norfolk & Marmon Co., Indianapolis, Ind.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Sarr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.
- Cotton Oil and Products.**
American Cotton Oil Co., New York, N. Y.
- Cotton Yarns. (Domestic Merchants.)**
Paulson, Linkroum & Co., New York, N. Y.
- Cotton-Jin Machinery.**
Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
Gade Excavating Co., The, Iowa Falls, Iowa.
Murray Co., The, Atlanta, Ga.
- Cotton-Mill Machinery.**
Draper Co., Hopedale, Mass.
Saco-Lowell Shop, Boston, Mass.
Whitinsville Spin'g Ring Co., Whitinsville, Mass.
- Cotton-Mill Supplies.**
American Supply Co., Providence, R. I.
Whitinsville Spin'g Ring Co., Whitinsville, Mass.
- Cottonseed-Oil Machinery.**
Buckeye Iron & Brass Works, Dayton, O.
Burruss Engineering Co., Atlanta, Ga.
Cardwell Machinery Co., Richmond, Va.
Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
French Oil Mill Machinery Co., Fiqua, O.
Hurray Co., The, Atlanta, Ga.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Counting and Weighing Machines. (For Industrial Plants.)**
National Scale Co., Chicopee Falls, Mass.
- Couplings.**
American Spiral Pipe Works, Chicago, Ill.
Golden's Foundry & Machine Co., Columbia, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Couplings. (Car.)**
National Tube Co., Pittsburgh, Pa.
Weimer Chain & Iron Co., Lebanon, Pa.
- Couplings. (Hose, Air, Gas, Steam and Water.)**
National Tube Co., Pittsburgh, Pa.
- Couplings. (For Reinforcing Bars.)**
Marion Malleable Iron Works, Marion, Ind.
- Coverings. (Pipe, Boiler, etc.)**
John-Manville Co., H. W., New York, N. Y.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
- Cranes. (Locomotive.)**
American Hoist & Derrick Co., St. Paul, Minn.
Ohio Locomotive Crane Co., Bucyrus, O.
- Cranes. (Traveling, Hand, Power, Hydraulic.)**
Lane Mfg. Co., Montpelier, Vt.
Spindel, J. G., Reading, Pa.
- Crayons.**
Georgia Talc Co., Asheville, N. C.
Lowell Crayon Co., Lowell, Mass.
- Crosscutting Equipment.**
Casey-Hedges Co., Chattanooga, Tenn.
Brothers-Weiss Co., Warren, Pa.
Walsh & Weider Boiler Co., Chattanooga, Tenn.
- Crossing Works.**
American Crosscut Works, New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscut Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.
- Crossarms and Pins.**
Western Electric Co., New York, N. Y.
- Crossarms. (Crosscut.)**
American Crosscut Wks., New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscut Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.
- Crossings. (See Railroad Frogs and Switches.)**
- Crosstie Machine.**
Standard Portable Saw Mill Co., New Orleans, La.
- Crossties. (Crosscut.)**
American Crosscut Works, New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscut Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.
- Crossties (Steel).**
Carnegie Steel Co., Pittsburgh, Pa.
- Crushed Stone.**
American Ballast Co., Knoxville, Tenn.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Chickamauga Quarry & Construction Co., Chattanooga, Tenn.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Weston Brook Quarry Co., Columbia, S. C.
- Crushers. (Corn and Cob.)**
Grundler Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Crushers. (Rock.)**
Austin Mfg. Co., Chicago, Ill.
Buchanan Co., Inc., C. G., New York, N. Y.
Power & Mining Machinery Co., Oudash, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Universal Road Mch. Co., Kingston, N. Y.
Western Wheel Scraper Co., Aurora, Ill.
Wheeling Mold & Fdry. Co., Wheeling, W. Va.
- Crushing and Pulverizing Machinery.**
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Aising Engineering Co., J. R., New York, N. Y.
Austin Mfg. Co., Chicago, Ill.
Bartlett & Snow Co., C. O., Cleveland, O.
Buchanan Co., Inc., C. G., New York, N. Y.
Grundler Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Works, Aurora, Ind.
Western Wheel Scraper Co., Aurora, Ill.
Wheeling Mold & Fdry. Co., Wheeling, W. Va.
- Culvert Pipe. (Cast Iron.)**
American Cast Iron Pipe Co., Birmingham, Ala.
Clow & Sons, James B., Chicago, Ill.
Donaldson Iron Co., Emaus, Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Lynchburg Foundry Co., Lynchburg, Va.
Nassellton Iron & Steel Co., Massillon, Ohio.
Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.
Wood & Co., R. D., Philadelphia, Pa.
- Culverts. (Corrugated Metal.)**
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Armco Culvert Publicity Bureau, Cincinnati, O.
Atlas Metal Works, Dallas, Tex.
Birmingham Metal Products Co., Birmingham, Ala.
- Culverts. (Vitrified Pipe.)**
Southern Sewer Pipe Co., Birmingham, Ala.
Stevens Sons Co., H., Macon, Ga.
- Cupola Furnaces.**
Paxson Co., J. W., Philadelphia, Pa.
- Curbing. (Granite.)**
Byrd Bros., Salisbury, N. C.
- Curb Protector. (Steel.)**
Steel Protected Concrete Co., Philadelphia, Pa.
- Cuts. (Half-Tone, Line, etc.)**
Baltimore Md. Engraving Co., Baltimore, Md.
- Cutter Grinders.**
Vitrified Wheel Co., Westfield, Mass.
- Cutting. (Oxy-Acetylene Process.)**
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
- Dams. (Reinforced Concrete.)**
Herry-Fortune Construction Co., Eatonton, Ga.
- Derricks and Derrick Fittings.**
American Hoist & Derrick Co., St. Paul, Minn.
Hyers Mach. Co., The John F., Ravenna, O.
Hayward Co., The, New York, N. Y.
Monaghan Machine Co., Chicago, Ill.
- Designers and Illustrators. (Printed Matter.)**
Baltimore, Md. Engraving Co., Baltimore, Md.
- Distilling Apparatus.**
Hoffman-Abiers Co., Cincinnati, Ohio.
- Ditching Machinery.**
American Hoist & Derrick Co., St. Paul, Minn.
Fairbanks Steam Shovel Co., Marion, O.
Gade Excavating Co., The, Iowa Falls, Iowa.
Hayward Co., The, New York, N. Y.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Williams Co., The, G. H., Cleveland, O.
- Doors. (Steel Rolling.)**
Kinneer Mfg. Co., Columbus, O.
- Doors. (Tin Clad.)**
Victor Mfg. Co., Newburyport, Mass.
- Doors, Sash and Blinds.**
Columbus Iron Works, Columbus, Ga.
- Draftsmen's Supplies.**
Weber & Co., F., Philadelphia, Pa.
- Dredge Chains.**
Weimer Chain & Iron Co., Lebanon, Pa.
- Dredge Cutters.**
Norborn Engineering Co., Philadelphia, Pa.
- Dredges. [See Excavating Machinery.]**
- Drills. (Electric.)**
Fort Wayne Electric Works, Fort Wayne, Ind.
- Drills. (Pneumatic.) [See also Drills Rock and Mining.]**
- Drills. (Prospecting.)**
Fort Wayne Electric Works, Madison, Wis.
Keystone Steam Well Mach. Co., Beaver Falls, Pa.
- Drills. (Rock and Mining.)**
Fort Wayne Electric Works, Madison, Wis.
Independent Pneumatic Tool Co., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Wickes Bros., Jersey City, N. J.
- Drills. (Twist.)**
McKenna Bros. Brass Co., Pittsburgh, Pa.
Morris Twist Drill & Mch. Co., New Bedford, Mass.
- Drive Well Points and Well Supplies.**
National Tube Co., Pittsburgh, Pa.
- Drop Forgings.**
American Spiral Pipe Works, Chicago, Ill.
- Drop Forging Machinery.**
Biles Co. E. W., Brooklyn, N. Y.
- Dry Docks. (Builders of)**
American Bridge Co. of New York, N. Y.
- Drying Machinery.**
American Process Co., New York, N. Y.
Haller-Lobby Co., The, Charleston, S. C.
Buffalo Forge Co., Buffalo, N. Y.
Conestoga, Boiler Works, Conestoga, Pa.
Cummer & Son Co., F. D., The, Cleveland, Ohio
Horse Manufacturing Co., South Boston, Mass.
Ruggles-Coles Engineering Co., New York, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Dry Kilns.**
Buffalo Forge Co., Buffalo, N. Y.
Moore Dry Kiln Co., L., Jacksonville, Fla.
- Dry Kiln Equipment.**
Moore Dry Kiln Co., L., Jacksonville, Fla.
- Drying Ovens.**
Oven Equipment & Mfg. Co., The, New Haven, Conn.
- Dunham's. (Hand Power.)**
McKenna Bros. Brass Co., Pittsburgh, Pa.
Spindel, J. G., Reading, Pa.
- Dump Wagons and Wagon Boxes.**
Troy Wagon Works Co., Troy, O.
- Dust-Collecting Systems.**
Buffalo Forge Co., Buffalo, N. Y.
King Co., F. E., Norfolk, Va.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
- Dynamite. (Industrial and Agricultural.)**
Atlas Powder Co., Wilmington, Del.
Jefferson Powder Co., Birmingham, Ala.
Keystone Nat'l Powder Co., Emporium, Pa.
- Dynamos and Motors.**
Assets Purchasing Co., Wheeling, W. Va.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Terry Steam Turbine Co., Hartford, Conn.
Triumph Electric Co., Cincinnati, Ohio.
Western Electric Co., New York, N. Y.
- Eaves. (Trough.)**
Edwards Mfg. Co., Cincinnati, O.
Hussey & Co. C. G., Pittsburgh, Pa.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
- Electors. (Sewage.)**
Lunkenheimer Co., The, Cincinnati, O.
Pacific Flash Tank Co., New York, N. Y.
- Electric Machinery. (Dynamoes, Generators, Motors, etc.)**
Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
American Machine Co., Louisville, Ky.
Crockett-Wheeler Co., Amper, N. J.
Engberg Electric & Mechanical Works, St. Joseph, Mich.
Fairbanks-Morse & Co., Atlanta, Ga.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Heer Engine Co., Portsmouth, O.
Lee Electric Co., Baltimore, Md.
Moore & Co., Edgar M., Pittsburgh, Pa.
Piedmont Electric Co., Asheville, N. C.
Robbins & Myers Co., Springfield, O.
Scheiner Co., R., Philadelphia, Pa.
Schroeder Electric Co., Evansville, Ind.
Sturtevant Co., B. F., Hyde Park Boston, Mass.
Triumph Electric Co., Cincinnati, O.
Wilson Mch. Co., Harold R., St. Louis, Mo.
- Electrical Contractors, Instruments and Supplies.**
Crockett-Wheeler Co., Amper, N. J.
Economy Fuse & Mfg. Co., Chicago, Ill.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Hill & Co., Walter E., Baltimore, Md.
John-Manville Co., H. W., New York, N. Y.
Lee Electric Co., Baltimore, Md.
Lory-Morton Co., Columbus, Ga.
Piedmont Electric Co., Asheville, N. C.
Robbins & Myers Co., Springfield, O.
- Electric Light Plants. (Portable.)**
Schroeder Electric Co., Evansville, Ind.
- Electro-Magnet. [See Magnet Electro.]**
- Electric Vehicles.**
General Vehicle Co., Long Island City, N. Y.
- Elevating, Conveying and Power Transmission Machinery. [See also Conveying and Elevating Machinery and Power Transmission Mch.]**
- Elevators.**
American Electric Machine & Elevator Co., St. Louis, Mo.
American Machine Co., Louisville, Ky.
Atlas Machine Co., Louisville, Ky.
Curnutt Elevator Co., James H., Cincinnati, O.
Kansas City Elevator Mfg. Co., Kansas City, Mo.
Miller Elevator Mfg. Co., Wm. A., St. Louis, Mo.
Moffat Machinery Mfg. Co., Charlotte, N. C.
Ohio Elevator & Machine Co., Columbus, O.
Otis Elevator Co., New York, N. Y.
Ridgway & Son Co., The, Westerville, Pa.
Spindel, J. G., Reading, Pa.
Warsaw Elevator Co., Baltimore, Md.
Westbrook Elevator Co., Danville, Va.
- Elevators. (Automatic.)**
Mathews Gravity Carrier Co., Ellwood City, Pa.
- Elevators. (Portable for Warehouses, etc.)**
Economy Elevator Co., Chicago, Ill.
- Elevator Bolts.**
Upon Nut Co., The, Cleveland, O.
- Elevator Buckets.**
Caldwell & Son Co., H. W., Chicago, Ill.
Hendrick Mfg. Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicetown (Philadelphia), Pa.
- Elevator Enclosures and Cabs.**
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baskett & Co., Baltimore, Md.
Meyers Mfg. Co., The Fred J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
Otis Elevator Co., New York, N. Y.
- Elevator Rope. [See Wire Rope.]**
- Elevator Safety Gates.**
American Elec. Mch. & Elevator Co., St. Louis, Mo.
Richmond Safety Gate Co., Richmond, Ind.
- Emery Wheels. [See Grinding Wheels.]**
- Employment Bureau.**
Diamond Labor Agency, Chicago, Ill.
- Engineers.**
- APPRAISAL.**
Day & Zimmerman, Philadelphia, Pa.
Farree Co., The H. G., Memphis, Tenn.
Maxey, John Wharton, Houston, Tex.
- BLAST FURNACES.**
Smythe Co., The S. R., Pittsburgh, Pa.
- CHEMICAL.**
Crosby, Walter W., Baltimore, Md.
Institute of Industrial Research, Washington, D. C.
Pittsburgh Testing Laboratory, Pittsburgh, Pa.
- CIVIL.**
Arnold Co., The, Chicago, Ill.
Blair & Drane, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Bryant, Glauco A., Wilson, N. C.
Firth, Joseph, Charlotte, N. C.
Freeman, Jr., Arthur C., Norfolk, Va.
Knowles, Morris, Pittsburgh, Pa.
Maynard-Carter, Chattanooga, Tenn.
Moore, H. E., New York, N. Y.
Potter, Alexander, New York, N. Y.
Rucker, B. Parks, Chattanooga, Tenn.
Shand Engineering Co., Columbia, S. C.
Solomon-Norcross Co., Atlanta, Ga.
Stevens, Harry, Washington, D. C.
Thompson & Mosley, Greensboro, N. C.
Waldo, W., Houston, Tex.
Walker Engineering Corp., Tampa, Fla.
White Companies, J. G., New York, N. Y.
- DAMS.**
Boyd, Geo. R., Savannah, Ga.
Quick, Alfred M., Baltimore, Md.
Requarth Co., C. W., Charlotte, N. C.
Spiker, William C., Atlanta, Ga.
White Companies, J. G., New York, N. Y.
- DRAINAGE AND IRRIGATION.**
Boyd, Geo. R., Savannah, Ga.
Brown & Clarkson, Washington, D. C.
Bryant, Glauco A., Wilson, N. C.
Cory-Harrison & Co., San Antonio, Tex.
Cummings, F. N. (Taylor), Claremont, Va.
Dabney Engineering Co., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Knowles, Morris, Pittsburgh, Pa.
McCrary Bros. & Cheves, Inc., Charleston, S. C.
Perkins, Edmund T., Engineering Co., Chicago, Ill.
Thompson & Mosley, Greensboro, N. C.
Walker Engineering Corp., Tampa, Fla.
Wright Engineering Co., San Antonio, Tex.
- EFFICIENCY.**
Crosby, Walter W., Baltimore, Md.
Institute of Industrial Research, Washington, D. C.
Quick, Alfred M., Baltimore, Md.
- ELECTRICAL.**
Arnold Co., The, Chicago, Ill.
Crockett-Wheeler Co., Amper, N. J.
Kellogg, P. O., Baltimore, Md.
Lory-Morton Co., Columbus, Ga.
Lude, Martin J., Birmingham, Ala.
Mole H. E., New York, N. Y.
Rucker, B. Parks, Charlotte, N. C.
Stone & Webster Eng'g. Corp., Boston, Mass.
Tucker & Laxon, Charlotte, N. C.
White, Gilbert C., Charlotte, N. C.
- ELECTRIC LIGHT AND POWER PLANTS.**
Dabney Engineering Co., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Fuller-Coutt Co., St. Louis, Mo.
Graves Engineering Co., Inc., New York, N. Y.
Groak Engineering Co., Irwin D., Chicago, Ill.
Kellogg, P. O., Baltimore, Md.
Lory-Morton Co., Columbus, Ga.
Scotfield Engineering Co., Philadelphia, Pa.
Stone & Webster Eng'g. Corp., Boston, Mass.
White Companies, J. G., New York, N. Y.
White, Gilbert C., Charlotte, N. C.
Wright Engineering Co., San Antonio, Tex.
- GAR.**
Ford, Bacon & Davis, New York, N. Y.
- GARBAGE DISPOSAL.**
Baylis, John R., Birmingham, Ala.
- GEOLOGICAL.**
Brown & Clarkson, Washington, D. C.
Davis, Geo. C., Philadelphia, Pa.
Frothing & Robertson, Richmond, Va.
Grimsley, G. P., Martinsburg, W. Va.
Institute of Industrial Research, Washington, D. C.
Maynard-Carter, Chattanooga, Tenn.
- HYDRO-ELECTRIC.**
Baylis, John R., Birmingham, Ala.
Brown & Clarkson, Washington, D. C.
Fuller-Coutt Co., St. Louis, Mo.
Howe, Charles F., Macon, Ga.
Knowles, Morris, Pittsburgh, Pa.
Maxey, John Wharton, Houston, Tex.
Quick, Alfred M., Baltimore, Md.
Requarth Co., C. W., Charlotte, N. C.
Rucker, B. Parks, Charlotte, N. C.
Scotfield Engineering Co., Philadelphia, Pa.
Serrins, J. E., Greenville, S. C.
Solomon-Norcross Co., Atlanta, Ga.
Spiker, William C., Atlanta, Ga.
Tucker & Laxon, Charlotte, N. C.
White Companies, J. G., New York, N. Y.
- ICE AND REFRIGERATING.**
Wright Engineering Co., San Antonio, Tex.
- INDUSTRIAL PLANT.**
Day & Zimmerman, Philadelphia, Pa.
Farree Co., The H. G., Memphis, Tenn.
Gilman, Harry L., Boston, Mass.
Guarantee Construction Co., New York, N. Y.
Institute of Industrial Research, Washington, D. C.
Kent, Robert S., Brooklyn, N. Y.
Lory-Morton Co., Philadelphia, Pa.
Shearer, C. E., Memphis, Tenn.
Steinmetz, C. M., Washington, D. C.
Stone & Webster Eng'g. Corp., Boston, Mass.
Stevens, Harry, Washington, D. C.
Summers & Co., L. L., Chicago, Ill.
White Companies, J. G., New York, N. Y.
- INSPECTIONS AND TESTS.**
Blair & Drane, Charlotte, N. C.
Crosby, Walter W., Baltimore, Md.
Frothing & Robertson, Richmond, Va.
Hill, Nicholas S., Jr., New York, N. Y.
Hunt & Co., Robert W., Chicago, Ill.
Institute of Industrial Research, Washington, D. C.
Pittsburgh Testing Laboratory, Pittsburgh, Pa.
- LANDSCAPE.**
Berkmans Co., P. J., Augusta, Ga.
Blair & Drane, Charlotte, N. C.
Crosby, Walter W., Baltimore, Md.
Cummings, F. N. (Taylor), Claremont, Va.
- LIGHTING.**
Ford, Bacon & Davis, New York, N. Y.
Fuller-Coutt Co., St. Louis, Mo.
McCrary & Co., J. B., Atlanta, Ga.
Rucker, B. Parks, Charlotte, N. C.
- LUMBER PLANTS.**
Steinmetz, C. M., Washington, D. C.

Engineers.

MECHANICAL.
Arnold Co., The, Chicago, Ill.
Groak, Irwin D., Chicago, Ill.
Kent Robert S., Brooklyn, N. Y.
Lide, Martin J., Birmingham, Ala.
McLundie, A. S., Chattanooga, Tenn.
Stemmetz, C. M., Washington, D. C.
Stevens, Harry, Washington, D. C.
Tucker & Laxton, Charlotte, N. C.

MINING.
Brown & Clarkson, Washington, D. C.
Grimsley, G. P., Martinsburg, W. Va.
Haney, Marshall, Bridgeport, W. Va.
Jones, E. M., Chattanooga, Tenn.
Maynard-Carter, Chattanooga, Tenn.

MUNICIPAL.
Anderson & Christie, Charlotte, N. C.
Hair & Drane, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Crosby, Walter W., Baltimore, Md.
Cory-Harrison & Co., San Antonio, Texas.
L. A. E. Engineering Co., Memphis, Tenn.
E. H. Henry, Dallas, Texas.
Firth, Joseph, Charlotte, N. C.
Freeman, Jr., Arthur G., Norfolk, Va.
Graves Engineering Co., Inc., New York, N. Y.
Knowles, Morris, Pittsburgh, Pa.
McCrary Bros. & Cheves, Inc., Charleston, S. C.
McCrory Co., J. B., Atlanta, Ga.
Pew, Arthur, Atlanta, Ga.
Shand Engineering Co., Columbia, S. C.
Shaw, F. H., Lancaster, Pa.
Walker Engineering Corp., Tampa, Fla.
White, Gilbert O., Charlotte, N. C.

PAVING AND ROAD.
Anderson & Christie, Charlotte, N. C.
Hair & Drane, Charlotte, N. C.
Bryant, Glauco, A., Wilson, N. C.
Crosby, Walter W., Baltimore, Md.
Elrod, Henry E., Dallas, Texas.
Firth, Joseph, Charlotte, N. C.
Fuller-Coutt Co., St. Louis, Mo.
Institute of Industrial Research, Washington, D. C.
McCrary Bros. & Cheves, Inc., Charleston, S. C.
Shand Engineering Co., Columbia, S. C.
White, Gilbert O., Charlotte, N. C.

PUBLIC SERVICE PROPERTIES.
Day & Zimmerman, Philadelphia, Pa.
Ferree Co., The H. G., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Gillman, Harry L., Boston, Mass.
Graves Engineering Co., Inc., New York, N. Y.
Maxey, John Wharton, Houston, Tex.
Scotfield Engineering Co., Philadelphia, Pa.
Stone & Webster Eng'g. Corp., Boston, Mass.
White Companies, J. G., New York, N. Y.

REINFORCED CONCRETE. (Bridges, Buildings, etc.)
Caldwell-Wingate Co., Atlanta, Ga.
Commines, F. N. (Taylor), Claremont, Va.
Foster-Creighton-Gould Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Luten, Daniel B., Indianapolis, Ind.
Potter, Alexander, New York, N. Y.
Seagrath Co., The S. R., Pittsburgh, Pa.
Savannah Eng. & Construction Co., Savannah, Ga.
Spiker, William C., Atlanta, Ga.
Steinmetz, C. M., Washington, D. C.
Tucker & Laxton, Charlotte, N. C.
White Companies, J. G., New York, N. Y.

RIVER AND HARBOR.
Gillman, Harry L., Boston, Mass.

SEWERAGE AND WATERWORKS.
Anderson & Christie, Charlotte, N. C.
Baylis, John R., Birmingham, Ala.
Hair & Drane, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Bryant, Glauco, A., Wilson, N. C.
Cory-Harrison & Co., San Antonio, Texas.
Dabney Engineering Co., Memphis, Tenn.
Firth, Joseph, Charlotte, N. C.
Ford, Bacon & Davis, New York, N. Y.
Freeman, Jr., Arthur G., Norfolk, Va.
Graves Engineering Co., Inc., New York, N. Y.
Hill, Jr., Nicholas, New York, N. Y.
Knowles, Morris, Pittsburgh, Pa.
Maxey, John Wharton, Houston, Tex.
Mayer, J. H., Birmingham, Ala.
Miller, Hiram Allen, Boston, Mass.
Myers, E. W., Greenboro, N. C.
Pew, Arthur, Atlanta, Ga.
Potter, Alexander, New York, N. Y.
Quick, Alfred M., Baltimore, Md.
Shaw, F. H., Lancaster, Pa.
Stevens, Harry, Washington, D. C.
Walker Engineering Corp., Tampa, Fla.
Washburn Co., A. H., Charlotte, N. C.
White Companies, J. G., New York, N. Y.
White Gilbert O., Charlotte, N. C.
Wright Engineering Co., San Antonio, Texas.

STEEL WORK AND ROLLING MILLS.
Saythe Co., The S. R., Pittsburgh, Pa.

STRUCTURAL STEEL.
Foster-Creighton-Gould Co., Nashville, Tenn.
Freeman, Jr., Arthur G., Norfolk, Va.
Shearer, C. E., Memphis, Tenn.
Solomon-Nurves Co., Atlanta, Ga.
Spiker, William C., Atlanta, Ga.

THEATRE CONSTRUCTION.
Gatlin, W. R., Hopkinsville, Ky.

Engines.

COMPRESSED AIR.
Dake Engine Co., Grand Haven, Mich.

GAS AND GASOLINE.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
Cooper Co., C. & G., Mt. Vernon, Ohio.
Gibbs Machinery Co., Inc., Columbia, S. C.
Heer Engine Co., Erie, Pa.
Hottel Engine Co., Portland, O.
Mietz, A., New York, N. Y.
Otto Gas Engine Works, Philadelphia, Pa.
Southern Engine & Boiler Works, Jackson, Tenn.
Struthers-Wells Co., Warren, Pa.
Van Duzen, Royce Co., The, Columbus, O.
Westinghouse Machine Co., The, Pittsburgh, Pa.

Oil.

Fairbanks-Morse & Co., Atlanta, Ga.
Heer Engine Co., Portsmouth, Ohio.
Mietz, A., New York, N. Y.
Snow Steam Pump Works, The, New York, N. Y.
Wygodsky Engine Co., New York, N. Y.

Steam.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
American Hoist & Derrick Co., St. Paul, Minn.
Ball Engine Co., Erie, Pa.
Buffalo Forge Co., Buffalo, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Cooper Co., C. & G., Mt. Vernon, Ohio.
Dake Engine Co., Grand Haven, Mich.
Engberg Electric & Mechanical Works, St. Joseph, Mo.
Erie City Iron Works, Erie, Pa.
Gibbs Machinery Co., Inc., Columbus, S. C.
Griffith & Wedge Co., The, Zanesville, O.
Harris Bros. Co., Chicago, Ill.
Houston, Stanwood & Gamble, Co., Cincinnati, O.
Lefell & Co., James, Springfield, O.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Phoenix Iron Works Co., Mendville, Pa.
Schofield Iron Works, Macon, Ga.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Viller Mfg. Co., Milwaukee, Wis.
Westinghouse Machine Co., Pittsburgh, Pa.

Envelopes.

Foung & Selden Co., Baltimore, Md.

Excavating Machinery.

American Clay Machinery Co., The, Bucyrus, Ohio.
Byers Mach. Co., The John F., Ravenna, O.
Fairbanks Steam Shovel Co., Marion, O.
Gade Excavating Co., The, Iowa Falls, Iowa.
Hayward Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Morris Machine Works, Baldwinville, N. Y.
National Hoisting Engine Co., Harrison, N. J.
Norborn Engineering Co., Philadelphia, Pa.
Williams Co., The G. H., Cleveland, O.

Excavators. (Trench.)

Fairbanks Steam Shovel Co., Marion, O.
Gade Excavating Co., The, Iowa Falls, Iowa.
Hayward Co., The, New York, N. Y.
Monaghan Machine Co., Chicago, Ill.

Excelsior Machinery.

Kline, Lewis T., Alpena, Mich.

Exhaust Heads.

American Spiral Pipe Works, Chicago, Ill.

Exhibits. (Machinery Builders' Equipment and Supplies.)
Builders' Exchange, Baltimore, Md.

Expansion Joints.

Badger & Sons Co., E. B., Boston, Mass.

Expanded Metal. [See Lath.]**Explosives.**

Atlas Powder Co., Wilmington, Del.
Jefferson Powder Co., Birmingham, Ala.
Keystone Nat'l. Powder Co., Emporium, Pa.

Export Trade Journal.

El Comercio, New York, N. Y.

Factory Sites. (Town and Railroad.) [See Industrial, Agricultural and Commercial Opportunities.]

Fans. (Electric.)

General Electric Co., Schenectady, N. Y.
Robbins & Myers Co., Springfield, O.

Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

Fastener Driving Machine. (Corrugated Joint.)
Saranac Machine Co., Benton Harbor, Mich.

Feed-Water Heaters and Purifiers.

American Water Soutener Co., Philadelphia, Pa.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Erie City Iron Works, Erie, Pa.
Murray Iron Works Co., Burlington, Ia.
National Pipe Bending Co., New Haven, Conn.
Scale & Sons Co., Wm. B., Pittsburgh, Pa.
Stewart Heater Co., Buffalo, N. Y.

Feed-Water Heater and Purifier and Oil Separator Combined.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Stewart Heater Co., Buffalo, N. Y.

Felt. (Building Sheathing.)

Barrett Mfg. Co., Philadelphia, Pa.

Fencing.

Gulf States Steel Co., Birmingham, Ala.

Fencing, Entrance Gates. (Iron, Steel, Wire.)

Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
New Jersey Wire Cloth Co., Trenton, N. J.
Ohio Elevator & Mach. Co., The, Columbus, O.

Fertilizer Machy. [See also Phosphate Mch.]
Stedman's Foundry & Machine Works, Aurora, Ind.
Vaik & Murdoch Iron Works, Charleston, S. C.

Fibre. (Vulcanized.)

Continental Fibre Co., Newark, Del.

Files.

Barnett Co., G. & H., Philadelphia, Pa.
Nicholson File Co., Providence, R. I.

Filters. (Water, for Domestic and Industrial Purposes.)
American Water Filter Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
New York Clay Jewell Fil. Co., New York, N. Y.

Fire Clay. [See Brick, Fire.]**Fire Door Fixtures.**

Richmond Safety Gate Co., Richmond, Ind.
Victor Mfg. Co., Newburyport, Mass.

Fire Extinguishers.

Badger & Sons Co., E. B., Boston, Mass.

Fire Escapes.

Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.

Fire Places. (Brick and Tile.)

Hood Brick Co., B. Middle, Atlanta, Ga.

Fireproof Building Construction. [See Concrete Construction.]

Fireproof Building Material.

Hannon Pipe Co., P., Louisville, Ky.
Johns-Manville Co., H. W., New York, N. Y.

Fireproof Doors and Shutters.

Kinner Mfg. Co., Columbus, O.
Richmond Safety Gate Co., Richmond, Ind.
Victor Mfg. Co., Newburyport, Mass.

Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

Fittings. (Wire Rope.)

American Steel & Wire Co., Chicago, Ill.

Waterbury Co., New York, N. Y.**Fireproofing. (Brick and Tile.)**

Hood Brick Co., B. Middle, Atlanta, Ga.

Fixtures. (Electric Lighting.)

Hill & Co., Walter E., Baltimore, Md.

Flanges. (Iron and Steel.)

American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
American Spiral Pipe Works, Chicago, Ill.
Dart Mfg. Co., E. M., Providence, R. I.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
National Tube Co., Pittsburgh, Pa.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Wood & Co., R. D., Philadelphia, Pa.

Flare Lamps.

Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

Flexible Joints.

Moran Flex. Steam Joint Co., Inc., Louisville, Ky.

Floor Surfacing Machine. (Auto-Ball Bearing Electric.)

Wayvell Chappell & Co., Chicago, Ill.

Floor Tile.

Northcross Mantel Co., W. J., Memphis, Tenn.

Flooring. (Crossed Block.)

Republic Crosscutting Co., Indianapolis, Ind.

Flooring. (Hardwood, Maple, Oak.)

Nashville Hardwood Flooring Co., Nashville, Tenn.
Whiting, William S., Asheville, N. C.

Flour and Grist Mill Machinery and Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.
Nordyke & Hannan Co., Indianapolis, Ind.
Salem Foundry & Machine Works, Salem, Va.
Starr Co., R. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Flue Lining.

Southern Sewer Pipe Co., Birmingham, Ala.

Forges.

Buffalo Forge Co., Buffalo, N. Y.

Forgings.

Weimer Chain & Iron Co., Lebanon, Pa.

Foundations. (Waterproof.)

Requarth Co., C. W., Charlotte, N. C.

Foundry Equipment and Supplies.

Newport Sand Bank Co., Inc., Newport, Ky.
Paxson Co., J. W., Philadelphia, Pa.

Foundry Facings. (Talc and Soapstones.)

Georgia Talc Co., Asheville, N. C.

Foundry and Machine Shops.

Earle Gear & Machine Co., Philadelphia, Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Goldens Foundry & Machine Wks., Columbus, Ga.
Grainger & Co., Louisville, Ky.
Lombard Iron Works, Augusta, Ga.
Poele Eng. & Mach. Co., Baltimore, Md.
Titus, E. C., Petersburg, Va.
Vaik & Murdoch Iron Works, Charleston, S. C.

Frogs. [See Railroad Frogs and Switches.]**Fuel Economizer.**

Green Fuel Economizer Co., Mattawan, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Fuel Oil.

Gulf Refining Co., Pittsburgh, Pa.
U. S. Asphalt Refining Co., New York, N. Y.

Furnaces. (For Industrial Purposes.)

Smythe Co., The S. R., Pittsburgh, Pa.

Fuses. (Electrical.)

Economy Fuse & Mfg. Co., Chicago, Ill.

Fuse Shells. (Renewable.)

Economy Fuse & Mfg. Co., Chicago, Ill.

Fuses, Bases and Fittings.

Johns-Manville Co., H. W., New York, N. Y.

Galvanized Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
McCalla, Inc., Harold, Philadelphia, Pa.
Portsmouth Steel Co., Portsmouth, O.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Garage and House. (Portable.)

Dixie Culvert & Metal Co., Atlanta, Ga.

Gas Blowers. (Turbine.)

Terry Steam Turbine Co., Hartford, Conn.

Gas Engines. [See Engines, Gas.]**Gas Machines.**

Kemp Mfg. Co., O. M., Baltimore, Md.
Milburn Co., Alex. N., Baltimore, Md.

Gas Plants.

Power & Mining Machinery Co., Gudahy, Wis.
Western Gas Construction Co., Ft. Wayne, Ind.

Gas Producers.

Otto Gas Engine Works, Philadelphia, Pa.
Smythe Co., The S. R., Pittsburgh, Pa.
Westinghouse Machine Co., Pittsburgh, Pa.
Wood & Co., R. D., Philadelphia, Pa.

Gasoline and Kerosene.

Gulf Refining Co., Pittsburgh, Pa.

Gas and Steam Fitters' Tools.

Saunders' Sons, D., Yonkers, N. Y.

Gears.

American Die & Tool Co., Reading, Pa.
Caldwell & Sons Co., H. W., Chicago, Ill.
Cresson-Morris Co., Philadelphia, Pa.
Earle Gear & Machine Co., The, Philadelphia, Pa.
James Mfg. Co., D. O., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Poele Engineering & Machine Co., Baltimore, Md.

Generating Sets.

Engberg Electric & Mechanical Works, St. Joseph, Mo.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Triumph Electric Co., Cincinnati, O.

Geologists.

Davis, Geo. C., Phila., Pa.
Frothing & Robertson, Richmond, Va.
Grimsley, G. P., Martinsburg, W. Va.
Maynard-Carter, Chattanooga, Tenn.

Glass. (Plate, etc.)

Binswanger & Co., Memphis, Tenn.

Governors. (Steam Engine.)

Pickering Governor Co., Portland, Conn.

Grain Elevator Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nictown (Philadelphia), Pa.

Granite.

Byrd Bros., Salisbury, N. C.
Southern Marble & Granite Co., Spartanburg, S. C.

Graphite.

Dixon Crucible Co., Joseph, Jersey City, N. J.

Grates and Grate Bars.

Huber Grate Bar & Stoking Co., Baltimore, Md.
Thomas Grate Bar Co., Birmingham, Ala.

Gravel.

Arundel Sand & Gravel Co., Baltimore, Md.

Gravel. (Roading and Road)

American Ballast Co., Knoxville, Tenn.

Gravity Spiral Chutes.

Mathews Gravity Carrier Co., Ellwood City, Pa.

Grease.

Albany Lubricating Co., New York, N. Y.

Grease Cups.

Albany Lubricating Co., New York, N. Y.
Lunkenheimer Co., The, Cincinnati, O.

Greases and Lubricating Compounds.

Albany Lubricating Co., New York, N. Y.
Galens Signal Oil Co., Franklin, Pa.
Robinson & Son Co., Wm. C., Baltimore, Md.

Grinders. (Gypsum, Limestone, etc.)

Stedman's Foundry & Machine Wks., Aurora, Ind.

Grinding Wheels.

Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.

Groovers.

Huther Bros. Saw Mfg. Co., Inc., Rochester, N. Y.

Gunpowder.

Atlas Powder Co., Wilmington, Del.
Jefferson Powder Co., Birmingham, Ala.
Keystone National Powder Co., Emporium, Pa.

Hammers. (Steam, Power, Pneumatic.)

Independent Pneumatic Tool Co., Chicago, Ill.

Handle Machinery. [See Woodworking Machinery.]**Hangers. [See Pulleys, Shafting and Hangers.]****Hay Tools.**

Myers & Bro., F. E., Ashland, O.

Heater. (Asphalt.)

Cumner & Son Co., F. D., The, Cleveland, Ohio.

Heating Apparatus, Engineers and Contractors.

American Blower Co., Detroit, Mich.
Buffalo Steam Pump Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Hoisting Machinery.

American Hoist & Derrick Co., St. Paul, Minn.
Bryant Machine Co., The John F., Ravenna, Ohio.
Dake Engine Co., Grand Haven, Mich.
Flory Mfg. Co., S., Bangor, Pa.
Link-Belt Co., Nictown (Philadelphia), Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Monaghan Machine Co., Chicago, Ill.
Stroudsburg Engine Works, Stroudsburg, Pa.

Hoists.

Cham, Spedel, J. G., Reading, Pa.

ELECTRIC.

American Hoist & Derrick Co., St. Paul, Minn.
Lidgerwood Mfg. Co., New York, N. Y.
Monaghan Mch. Co., Chicago, Ill.
National Hoisting Engine Co., Harrison, N. J.
Otis Elevator Co., New York, N. Y.
Patten Mfg. Co., Chattanooga, Tenn.

Industrial Track Work. [See Railways, Ind.]**Injectors.**

Johnson Bros., New York, N. Y.
Lunkenheimer Co., The, Cincinnati, O.
Sellers & Co., Inc., Wm., Philadelphia, Pa.

Insulated Wires and Cables.

American Steel & Wire Co., Chicago, Ill.
Safety Insulated Wire & Cable Co., New York, N. Y.

Insulating Materials.

Continental Fibre Co., Newark, Del.
General Electric Co., Schenectady, N. Y.
John-Manville Co., H. W., New York, N. Y.
Standard Paint Co., New York, N. Y.

Insulating. (Tape.)

Standard Paint Co., New York, N. Y.

Insulating. (Varnishes and Compounds.)

Standard Paint Co., New York, N. Y.

Iron.

La Belle Iron Works, Steubenville, O.
Lebanon Valley Iron & Steel Co., Lebanon, Pa.
Republiron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Union Drawn Steel Co., Beaver Falls, Pa.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Irrigation Machinery.

Omerson Steam Pump Wks., A. S. New York, N. Y.

Investment Securities.

Provident Savings Bank & Trust Co., Cincinnati, Ohio.

Junk Dealers.

Kander & Co., H., Bowling Green, Ohio.

Kettles. (Steam Jacket.)

Badger & Sons Co., E. H., Boston, Mass.

Key Seater. (Portable.)

Barr & Son, John T., Brooklyn, N. Y.

Knitting Machinery.

Acme Knitting Mch. & Needle Co., Franklin, N. H.

Labor Agency.

Diamond Labor Agency, Chicago, Ill.

Lace Leather.

Graton & Knight Mfg. Co., Worcester, Mass.

Lamps. (Arc and Incandescent.)

Boston-Economy Lamp Division, Danvers, Mass.
General Electric Co., Schenectady, N. Y.
Lee Electric Co., Baltimore, Md.
Piedmont Electric Co., Asheville, N. C.
Westinghouse Lamp Co., New York, N. Y.

Lamps. (Carbon and Tungsten.)

Newman Electric Lamp Co., Cincinnati, O.

Lamp Posts. (Electric, Gas.)

Union Foundry Co., Anniston, Ala.
Western Gas Construction Co., Ft. Wayne, Ind.

Lamp Standards. (Ornamental Iron.)

Union Foundry Co., Anniston, Ala.

Lands. (Mineral, Timber, Farm, etc.) [See Industrial, Agricultural and Commercial Opportunities.]**Landscape Architects** (See Engineers.) [Landscape]**Lath.** (Expanded Metal.)

Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.

Lathes. (Engine.)

Greaves, Klusman Tool Co., The, Cincinnati, O.

Latin American Trade.

El Comercio, New York, N. Y.

Lawn Furniture. (Wire.)

Bolles Iron & Wire Works, J. E., Detroit, Mich.
Duff & Co., Baltimore, Md.
Duff, Baggett & Co., Baltimore, Md.

Leadite.

Leadite Co., Inc., The, Philadelphia, Pa.

Letter Sealing Machinery.

Sealograph Co., Kansas City, Mo.

Lights. (Portable Acetylene.)

Milburn Co., Alex. N., Baltimore, Md.

Lime. (Hydrated.)

Security Cement & Lime Co., Hagerstown, Md.

Limestone Products.

Security Cement & Lime Co., Hagerstown, Md.

Liquor Filters.

International Filter Co., Chicago, Ill.

Lithographers, Engravers.

Young & Selden Co., Baltimore, Md.

Lockers. (Metal.)

Bernstein Mfg. Co., Phila., Pa.
Eighley Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.

Lockers. (Steel.)

Merritt & Co., Camden, N. J.

Locomotives.**INDUSTRIAL.**

Baldwin Locomotive Wks., The, Philadelphia, Pa.

Limbs. (Metal.)

Card, Geo. H., Cincinnati, O.
Davenport Locomotive Works, Davenport, Ia.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.

RAILWAY.

Baldwin Locomotive Wks., The, Philadelphia, Pa.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.

Lag Dumping Device.

Chase Turbine Mfg. Co., Orange, Mass.

Looms and Weaving Machinery.

Draper Co., Hopedale, Mass.
Saco-Lowell Shops, Boston, Mass.

Loom Harness.

American Supply Co., Providence, R. I.

Lubricants.

Albany Lubricating Co., New York, N. Y.
Oils Elevator Co., New York, N. Y.

Lubricants. (Graphite.)

Dixon Crucible Co., Joseph, Jersey City, N. J.

Lumber.

Industrial Lumber Co., Elizabeth, La.
American Cresote Works, New Orleans, La.

Lumber. (Heavy Construction, Pitch Pine, etc.)

Industrial Lumber Co., Elizabeth, La.
National Lumber & Cresote Co., Texarkana, Ark.

Lumber Buggies.

Soule Steam Feed Works - Meridian, Miss.

Lumber Stackers.

Soule Steam Feed Works, Meridian, Miss.

Machinery. (Special.)

Rice Co., E. W., Brooklyn, N. Y.
Rima, Lewis T., Alpena, Mich.
Universal Machine Co., Baltimore, Md.

Machinery and Supplies. (New and Second-Hand Bargains.)

Assets Purchasing Co., Wheeling, W. Va.
Boston Iron & Metal Co., Balto., Md.

Cassey Machinery Co., D. L., Springfield, O.
Cleveland Belling & Machinery Co., Cleveland, O.
Consolidated Iron & Metal Co., Chattanooga, Tenn.

Contractors' Service Co., New York, N. Y.
Dunne & Son, New York, N. Y.
Harris Bros. Co., Chicago, Ill.

Hilner's Sons Co., Henry A., Philadelphia, Pa.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.

Lehman, Charles T., Birmingham, Ala.
Lodge & Shipley Mach. Tool Co., Cincinnati, O.

Marine Metal & Supply Co., New York, N. Y.
Moore & Co., Edgar M., Pittsburgh, Pa.

New River Co., Macdonald, W. Va.
Nussbaum & Co., V. M., Fort Jayne, Ind.

Pannmuller Engineering Co., Chicago, Ill.
Pipe & Contractors' Supply Co., New York, N. Y.

Power Equipment Co., New York, N. Y.
Prentiss Tool & Supply Co., New York, N. Y.

Randall Machinery Co., Cincinnati, O.
Read Co., Howard W., Philadelphia, Pa.

Sachsmaier & Co., George, Philadelphia, Pa.
Samuel, Frank, Philadelphia, Pa.

Seyfert's Sons, Inc., L. F., Philadelphia, Pa.
South Side Fdry. & Mch. Co., Charleston, W. Va.

Thomas & Machinery Exchange, Tampa, Fla.
Thomasville Iron Works, Thomasville, Ga.

Toomey, Frank, Inc., Philadelphia, Pa.
Wilson Machy. Co., Harold R., St. Louis, Mo.

Winterer Co., Herman L., Philadelphia, Pa.

Machine Tools.

Greaves, Klusman Tool Co., The, Cincinnati, O.

Machinists. (Engineers.)

Savannah Iron Works, Savannah, Ga.
Universal Machine Co., Baltimore, Md.

Magnesite Materials.

John-Manville Co., H. W., New York, N. Y.

Magnetic Separators.

Buchanan & Co., Inc. C. G., New York, N. Y.
Paxon Co., J. W., Philadelphia, Pa.

Mail Chutes.

Cutler Mail Chute Co., Rochester, N. Y.

Mantels. (Tile.)

Northcross Mantel Co., W. J., Memphis, Tenn.

Mantels. (Wooden.)

Northcross Mantel Co., W. J., Memphis, Tenn.

Mechanical Draft.

Buffalo Forge Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Metal Ceilings. [See Ceilings, Metal.]

Metaline Co., Long Island City, N. Y.

Metal. (For Tanks, Culverts, Roofing, etc.)

Portsmouth Steel Co., Portsmouth, O.

Metal Corner Bead.

Penn Metal Co., Boston, Mass.

Metal Culverts. [See Culverts.] (Corrugated Metal.)

Metal Shingles. [See Shingles.] (Metal.)

Metal Stamping.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Metal Window Frames and Sash. [See Window Frames and Sash.] (Fireproof.)

Metal Work. [See Sheet Metal Work.]

Metal-Working Machinery. (Sheet.)

Bliss Co., E. W., Brooklyn, N. Y.

Meters. (Water.)

Alberger Pump & Condenser Co., New York, N. Y.

Meter Boxes, Couplings, Gauges. (Water.)

Clark Co., H. W., Mattoon, Ill.

Micrometers, Calipers, etc.

Starrett Co., L. S., Athol, Mass.

Milk Filters. (Liquor, Milk, etc.)

International Filter Co., Chicago, Ill.

Mill Engineers and Architects.

O'Brian, W. C., Memphis, Tenn.
Sirrino, J. E., Greenville, S. C.

Mill Supplies.

Bailey-Letty Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.

Gaineville Iron Works, Gaineville, Ga.
Lombard Iron Works, Augusta, Ga.
Lunkenheimer Co., The, Cincinnati, O.

Mecklenburg Iron Works, Charlotte, N. C.
Nordyke & Marnon Co., Indianapolis, Ind.

Salem Foundry & Machine Wks., Salem, Va.
Sarr Co., B. F., Baltimore, Md.

Wolf Co., Chambersburg, Pa.

Mining Machinery. (Gold, Copper, Plate, etc.)

Bartlett & Snow Co., C. O., Cleveland, O.

Jeffrey Mfg. Co., Columbus, O.

McLannan-Stone Mach. Co., Hollidaysburg, Pa.
Mecklenburg Iron Works, Charlotte, N. C.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Mixers. (Concrete.)

Atlas Engineering Co., Milwaukee, Wis.

Blystone Mfg. Co., Cambridge Springs, Pa.
Standard Scie & Supply Co., Philadelphia, Pa.

Van Duzens, Rys Co., The, Columbus, O.

Mixing Machinery.

Dunning, W. D., Syracuse, N. Y.

Mortar Colors.

Chattanooga Paint Co., Chattanooga, Tenn.

Motor Trucks. (Electric.)

General Vehicle Co., Long Island City, N. Y.

Motor Trucks. (Gasoline.)

White Co., The, Cleveland, O.

Motor Trucks. (Second Hand.)

Mar-Del Mobile Co., Baltimore, Md.

Music Wire.

Waterbury Co., The, New York, N. Y.

Nails. (Cut.)

La Belle Iron Works, Steubenville, O.

Nails and Spikes.

La Belle Iron Works, Steubenville, Ohio.
Lebanon Valley Iron & Steel Co., Lebanon, Pa.

Republiron & Steel Co., Youngstown, O.
Youngstown Sheet & Tube Co., Youngstown, O.

Nuts. [See Bolts, Nuts, Rivets, etc.]

Office Furniture (Steel)

Merritt & Co., Camden, N. J.

Oil. (Cresote.)

Barrett Mfg. Co., Philadelphia, Pa.

Oils. (Lubricating, Etc.)

Albany Lubricating Co., New York, N. Y.
Galena Signal Oil Co., Franklin, Pa.

Gulf Refining Co., Pittsburgh, Pa.
Robinson & Son Co., Wm. C., Baltimore, Md.

Oil Cans.

Wall Mfg. Supply Co., P., Allegheny, Pa.

Oil Engines. [See Engines (Oil).]**Oil Separators.**

Stewart Hester Co., Buffalo, N. Y.

Oil Well Machinery.

Keystone Steam Well Mach. Co., Beaver Falls, Pa.

Oil Well Tubing and Casing.

Byers Co., A. M., Pittsburgh, Pa.

Ore Handling Machinery. [See Coal Handling Machinery.]**Ornamental Iron Works.**

Bolles Iron & Wire Wks., J. E., Detroit, Mich.

Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.

Dow Wire & Iron Works, Louisville, Ky.
Ohio Elevator & Mach. Co., The, Columbus, O.

Schrieber & Sons Co., The, Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.

Ovens. (Baking, Enameling, Japanning.)
Oven Equipment & Mfg. Co., The, New Haven, Conn.

Oxygen.

International Oxygen Co., New York, N. Y.

Oxygen Generators.

International Oxygen Co., New York, N. Y.

Oxy-Acetylene Welding and Cutting Outfit and Supplies.

International Oxygen Co., New York, N. Y.

Milburn Co., Alex. N., Baltimore, Md.

Packing. (Asbestos, Metallic, Rubber, Leather, etc.)

Goodyear Tire & Rubber Co., Akron, Ohio.

Graton & Knight Mfg. Co., Worcester, Mass.
Jenkins Bros., New York, N. Y.

John-Manville Co., H. W., New York, N. Y.
Power Specialty Co., New York, N. Y.

United Lead Co., New York, N. Y.

Packing. (Lead Wool.)

United Lead Co., New York, N. Y.

Paint. (Cement Floors, Masonry, Stucco, etc.)

Cheesman & Elliott, New York, N. Y.

Standard Paint Co., New York, N. Y.

Paint. (Metal Surfaces.)

Cheesman & Elliott, New York, N. Y.

Dixon Crucible Co., Joseph, Jersey City, N. J.

Standard Paint Co., The, New York, N. Y.

Paint. (Roofing, Building, etc.)

Cameron & Barkley Co., Charleston, S. C.

Chattanooga Paint Co., Chattanooga, Tenn.

Standard Paint Co., New York, N. Y.

Paper. (Roofing, Building, Sheeting, etc.)

Barrett Mfg. Co., Philadelphia, Pa.

Cameron & Barkley Co., Charleston, S. C.

Standard Paint Co., New York, N. Y.

Patents and Inventions.

Russell Machine Co., F. K., Dallas, Tex.

Patent Attorneys.

Brown, Eugene C., Washington, D. C.

Chandless & Chandless, Washington, D. C.

Coleman, Watson E., Washington, D. C.

Duffie & Co., John S., Washington, D. C.

Evans & Co., Victor J., Washington, D. C.

Figler & Co., W. T., Washington, D. C.

Hill, H. S., Washington, D. C.

Hodges, Vernon E., Washington, D. C.

Jennett, Herbert, Washington, D. C.

Lacey, R. S. & A. H., Washington, D. C.

McLundie, A. S., Chattanooga, Tenn.

Pulleys. (Friction Clutch.)

Caldwell & Son Co., H. W., Chicago, Ill.
Crescon-Morris Co., Philadelphia, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Moore & White Co., The, Philadelphia, Pa.
Pole Engineering & Mach. Co., Baltimore, Md.
Wood's Sons Co., T. B., Chambersburg, Pa.

Pulleys. (Steel Rims.)

Medart Patent Pulley Co., St. Louis, Mo.

Pulleys. (Wood Split.)

Caldwell & Son Co., H. W., Chicago, Ill.
Lane Mfg. Co., Montpelier, Vt.
Medart Patent Pulley Co., St. Louis, Mo.
Revere Pulley Co., Columbus, Ind.
Saginaw Mfg. Co., Saginaw, Mich.
Salem Foundry & Machine Wks., Salem, Va.

Pulleys, Shafting and Hangers.

Caldwell & Son Co., H. W., Chicago, Ill.
Crescon-Morris Co., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden Foundry & Mach. Co., Columbus, Ga.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lane Mfg. Co., Montpelier, Vt.
Link-Belt Co., Nictown (Philadelphia), Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Nordyke & Mather Co., Indianapolis, Ind.
Pole Engineering & Mach. Co., Baltimore, Md.
Wood's Sons Co., T. B., Chambersburg, Pa.

Pulverizers.

Aising Engineering Co., J. R., New York, N. Y.
Austin Mfg. Co., Chicago, Ill.
Gruendler Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Bros., Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Wks., Aurora, Ind.
Western Wheel Scraper Co., Aurora, Ill.

Pumping Machinery.

Alberger Pump & Condenser Co., New York, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
Myers & Bros., F. E., Ashland, O.
Norborn Engineering Co., Philadelphia, Pa.
Sydnor Pump & Well Co., Inc., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Air.)

Blakeslee Mfg. Co., Du Quoin, Ill.

Pumps. (Boiler Feed.)

Alberger Pump & Condenser Co., New York, N. Y.
Blakeslee Mfg. Co., Du Quoin, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Jeaneville Iron Works Co., Hazelton, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Myers & Bros., F. E., Ashland, O.
Union Steam Pump Co., Battle Creek, Mich.

Pumps. (Centrifugal.)

Alberger Pump & Condenser Co., New York, N. Y.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Works, Erie, Pa.
Jeaneville Iron Works Co., Hazelton, Pa.
Morris Machine Works, Baldwinville, N. Y.
Norborn Engineering Co., Philadelphia, Pa.
Pacific Flash Tank Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Deep Well.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.

Pumps. (Dredging.)

Buffalo Steam Pump Works, Buffalo, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Morris Machine Works, Baldwinville, N. Y.
Norborn Engineering Co., Philadelphia, Pa.
Wood & Co., R. D., Philadelphia, Pa.

Pumps. (Hydraulic.)

Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cardwell Machine Co., Richmond, Va.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Erie Pump & Engine Works, Erie, Pa.
French Oil Mill Mchry. Co., The, Fiqua, O.

Pumps. (Oil and Gasoline.)

Keystone Boiler & Fdry. Co., Columbia, Pa.

Pumps. (Steam.)

Alberger Pump & Condenser Co., New York, N. Y.
Blake & Knowles Steam Pump Wks., East Cambridge, Mass.
Blakeslee Mfg. Co., Du Quoin, Ill.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Clayton Air Compressor Works, Cambridge, Mass.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Fairbanks-Morse & Co., Atlanta, Ga.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Murray Iron Works, Co., Burlington, Ia.
Scranton Pump Co., Scranton, Pa.
Snow Steam Pump Works, The, New York, N. Y.
Sydnor Pump & Well Co., Inc., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Worthington, Henry R., Harrison, N. J.

Pumps. (Turbine Driven.)

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Pumps. (Vacuum.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Union Steam Pump Co., Battle Creek, Mich.

Pumps. (Water-works.)

Goulds Mfg. Co., Seneca Falls, N. Y.

Pump Leathers.

Graton & Knight Mfg. Co., Worcester, Mass.

Punches and Dies.

American Die & Tool Co., Reading, Pa.

Punching and Shearing Machinery.

Blies Co., E. W., Brooklyn, N. Y.

Racks. (For Pattern Storage.)

Merritt & Co., Camden, N. J.

Railroads. [See Industrial, Agricultural and Commercial Opportunities.]**Railroad Equipment and Supplies.** (New and Second-hand.)

American Frog & Switch Co., Hamilton, O.
Bailey-Lobby Co., The, Charleston, S. C.
Birmingham Rail & Loco. Co., Birmingham, Ala.
Cincinnati Frog & Switch Co., Cincinnati, O.
Curd, Geo. H., Cincinnati, O.
Fairbanks-Morse & Co., Atlanta, Ga.
Foster Co., L. B., Pittsburgh, Pa.
Georgia Car & Locomotive Co., Atlanta, Ga.

Green Equipment Co., L. A., Pittsburgh, Pa.
Grimeshaw, Wm. B., Philadelphia, Pa.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., E. G., Baltimore, Md.
Hyde, Chas., Pittsburgh, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
Macleary, J. H., Suffolk, Va.
National Steel Rail Co., St. Louis, Mo.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Read Co., Howard W., Philadelphia, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. C., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
United States Rail Co., Cumberland, Md.
Weir Frog Co., Cincinnati, O.
Wilson & Co., E. H., Philadelphia, Pa.
Wilson Mach. Co., Harold R., St. Louis, Mo.
Zelicker Supply Co., Walter A., St. Louis, Mo.

Railroad Frogs and Switches.

American Frog & Switch Co., Hamilton, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Conier Frog & Switch Co., Memphis, Tenn.
Easton Car & Construction Co., Easton, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
Newhall Engineering Co., Geo. M., Philadelphia, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sweet's Steel Co., Williamsport, Pa.
Weir Frog Co., Cincinnati, O.

Rails. (Steel.)

Carnegie Steel Co., Pittsburgh, Pa.
Continental Iron & Steel Co., New York, N. Y.
Foster Co., L. B., Pittsburgh, Pa.
Franks, J. C., Atlanta, Ga.
Green Equipment Co., L. A., Pittsburgh, Pa.
Gulf States Steel Co., Birmingham, Ala.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., E. G., Baltimore, Md.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
Hyde, Chas., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Lavis & Co., Henry, Philadelphia, Pa.
Macleary, J. H., Suffolk, Va.
National Steel Rail Co., St. Louis, Mo.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. C., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & R. R. Co., B'ham'm, Ala.
United States Rail Co., Cumberland, Md.
Wilson & Co., E. H., Philadelphia, Pa.

Rail Bonds.

American Steel & Wire Co., Chicago, Ill.

Rail Braces, Crossings, etc. [See R. R. Frogs and Switches.]**Railings and Grilles.** (Brass.)

Newman Mfg. Co., Cincinnati, O.

Railways. (Industrial.)

Chase Fdry. & Mfg. Co., Columbus, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Easton Car & Construction Co., Easton, Pa.
Hunt Co., Inc., C. V., West New Brighton, N. Y.
Link-Belt Co., Nictown (Philadelphia), Pa.

Rams. (Hydraulic.) [See Hydraulic Ram.]**Reamers.**

American Die & Tool Co., Reading, Pa.
Morse Twist Drill & Mch. Co., New Bedford, Mass.

Reeds.

American Supply Co., Providence, R. I.

Refrigerating Machinery and Apparatus.

Brecht Co., The, St. Louis, Mo.
Huesteman & Crand Co., The, Detroit, Mich.
Remington Machine Co., Wilmington, Del.
Vilter Mfg. Co., Milwaukee, Wis.
Vogt Machine Co., Henry, Louisville, Ky.
York Mfg. Co., York, Pa.

Reinforcing Bars. [See Concrete Reinforcing Bars.]**Riveters.** (Pneumatic.)

Independent Pneumatic Tool Co., Chicago, Ill.

Road Machinery.

Austin Bros., Atlanta, Ga.
Austin-Western Road Mchry. Co., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Contractors Mchry. & Supply Co., Pittsburgh, Pa.
Erie Machine Shops, Erie, Pa.
Galion Iron Works & Mfg. Co., The, Galion, Ohio.
Holt Manufacturing Co., The, Peoria, Ill.
Huber Mfg. Co., The, Marion, Ohio.
Kelly Springfield Road Roller Co., Springfield, O.
Syracuse Chilled Plow Co., Syracuse, N. Y.
Universal Road Mchry. Co., Kingston, N. Y.
Western Wheel Scraper Co., Aurora, Ill.
Wheeling Mold & Fdry. Co., Wheeling, W. Va.

Roadmaking Materials.

Austin Bros., Atlanta, Ga.
Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Binders.

Barber Asphalt Paving Co., Phila., Pa.
Barrett Mfg. Co., Phila., Pa.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Rollers. (Steam.)

Austin-Western Road Mchry. Co., The, Chicago, Ill.
Barber Asphalt Paving Co., The, Buffalo, N. Y.
Buffalo Steam Roller Co., Buffalo, N. Y.
Erie Machine Shops, Erie, Pa.
Huber Mfg. Co., The, Marion, Ohio.
Kelly Springfield Road Roller Co., Springfield, O.
Universal Road Mchry. Co., Kingston, N. Y.

Road Oil.

Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Preservatives.

Barrett Mfg. Co., Philadelphia, Pa.
Finley, Sam. E., Atlanta, Ga.
Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Scarifiers.

Buffalo Steam Roller Co., Buffalo, N. Y.
Galion Iron Works & Mfg. Co., The, Galion, Ohio.
Huber Mfg. Co., The, Marion, Ohio.

Rock Crushers. [See Crushers, Rock.]**Roller Covering Supplies.**

American Supply Co., Providence, R. I.

Roofing Caps.

Robertson Steel & Iron Co., W. F., Cincinnati, O.

Roofing. (Ready Prepared: Felt, Tar, Asbestos, Asphalt.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Roofing Co., Beaver Falls, Pa.
Asphalt Ready Roofing Co., New York, N. Y.
Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
Johns-Manville Co., H. W., New York, N. Y.
Standard Paint Co., The, New York, N. Y.

Roofing. (Metal Shingles.) [See Shingles, Metal.]

Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.

Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.

Roofing. (Slate.)

East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Johnson, E. J., New York, N. Y.

Roofing and Siding. (Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Beaver Falls, Pa.
Cameron & Barkley Co., Charleston, S. C.
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.
Moersch-Edwards Corrugating Co., Covington, Ky.
New Orleans Roofing & Metal Wks., New Orleans, La.
Portsmouth Steel Co., Portsmouth, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Tennessee Metal Culvert Co., Nashville, Tenn.
Youngstown Sheet & Tube Co., Youngstown, O.

Rope. (Manila, Sisal, Hemp, etc.)

Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Rope. (Wire.)

American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Hunt Co., Inc., C. V., West New Brighton, N. Y.
Waterbury Co., New York, N. Y.

Rope Drives.

Caldwell & Son, H. W., Chicago, Ill.
Crescon-Morris Co., Philadelphia, Pa.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Rubber Goods.

Electric Hose & Rubber Co., Wilmington, Del.
Eureka Fire Hose Mfg. Co., New York, N. Y.
Goodyear Tire & Rubber Co., Akron, Ohio.

Rules. (Steel.)

Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Safes and Vaults.

York Safe & Lock Co., York, Pa.

Sand.

Arundel Sand & Gravel Co., Baltimore, Md.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Sand. (Foundry.)

Newport Sand Bank Co., Inc., Newport, Ky.

Sap Stain Preventive.

Church & Dwight Co., New York, N. Y.

Sash Chain.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Saws.

Garloch Co., Peter, Cleveland, O.
Huthier Bros. Saw Mfg. Co., Inc., Rochester, N. Y.
Smith Machine Co., H. B., Smithville, N. J.
Sydnor Pump & Well Co., Inc., Richmond, Va.

Saws. (Band.)

Smith Machine Co., H. B., Smithville, N. J.

Saws. (Hack.)

Starrett Co., L. S., Athol, Mass.

Sawmill Dugs.

Soule Steam Feed Works, Meridian, Miss.

Sawmills.

Gainesville Iron Works, Gainesville, Ga.
Gibbs Machinery Co., Inc., Columbia, S. C.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.

Sawmill Machinery.

Bailey-Lobby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Chase Turbine Mfg. Co., Orange, Mass.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.
Mecklenburg Iron Works, Charlotte, N. C.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Wks., Jackson, Tenn.
Sydnor Pump & Well Co., Inc., Richmond, Va.

Saw Sharpeners.

Carbondom Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.

Saw Sharpeners and Files. (Cotton Gin.)

Carver Cotton Gin Co., East Bridgewater, Mass.

Sawing Outfits. (Contractors and Industrial.)

Rutland Foundry & Machine Co., Bennington, Vt.

Scales.

Standard Scale & Supply Co., Pittsburgh, Pa.

Scales. (Weighing and Counting.)

National Scale Co., Chicago Falls, Mass.

Scrap Iron & Steel.

Kander & Co., H., Bowling Green, Ohio.

Screens. (Fly, Window and Door.)

Cincinnati Mfg. Co., Cincinnati, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Screens. (Mining, Stone, etc.)

Converse Co., Inc., F. S., Lestershire, N. Y.
Erdle Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Mundt & Sons, Charles, Jersey City, N. J.
New Jersey Wire Cloth Co., Trenton, N. J.

Screenings. (For Concrete and Road Construction.)

American Ballast Co., Knoxville, Tenn.

Screws. (Machine.)

Progressive Mfg. Co., Torrington, Conn.

Screws. (Safety Set.)

Allen Manufacturing Co., Inc., Hartford, Conn.

Searchlights.

Et. Wayne Electric Works, Et. Wayne, Ind.

Separators. (Dust.)

Buffalo Forge Co., Buffalo, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Sewer Flushing Siphons.

Merritt Hydraulics Co., Philadelphia, Pa.

Sewer Joint Compounds.

Pacific Flash Tank Co., New York, N. Y.

Sewer Pipe. (Vitrified.)

Bannon Pipe Co., E., Louisville, Ky.
Blackmer & Post Pipe Co., St. Louis, Mo.
Cannellon Sewer Pipe Co., Cannellon, Ind.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Sewer Pipe Co., Birmingham, Ala.
Stevens Sons Co., H., Macon, Ga.

Sewer Pipe and Drains. (Monolithic Concrete)

Requarth Co., C. W., Charlotte, N. C.

Sewage Pumping and Disposal Apparatus.

Merritt Hydraulics Co., Philadelphia, Pa.
Pacific Flash Tank Co., New York, N. Y.

Shafts. (Automobile.)

American Die & Tool Co., Reading, Pa.
Shaffling. (Cold Rolled Steel.)
American Steel & Wire Co., Chicago, Ill.

Shafting. (Polished Steel.)

Jones & Laughlin Steel Co., Pittsburgh, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Republic Iron & Steel Co., Youngstown, O.
Union Drawn Steel Co., Beaver Falls, Pa.

Shafting. [See Pulleys, Shafting and Hangers.]**Sharpening Stones.**

Carbondom Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.

Sheet, Brass and Copper.

Huesey & Co., C. G., Pittsburgh, Pa.

Sheet Metal Work.

Atlas Metal Works, Dallas, Tex.
Birmingham Metal Products Co., Birmingham, Ala.

Sheet Metal Works.

Danzer Metal Works, Hagerstown, Md.
Dixie Culvert & Metal Co., Atlanta, Ga.
Lone Star Culvert Co., Houston, Tex.
McMillan Bros., Jacksonville, Fla.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.

Sheet Metal Working Machinery.

Blies Co., E. W., Brooklyn, N. Y.

Sheet Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
La Belle Iron Works, Steubenville, O.

Steamship Lines. (Trans Atlantic.)
 Cunard Steamship Co., Ltd., New York, N. Y.

Steam Shovel Chains.
 Weimer Chain & Iron Co., Lebanon, Pa.

Steam Shovels.
 American Clay Machinery Co., The Bucyrus, Ohio.
 Fairbanks Steam Shovel Co., Marion, O.
 Keystone Driller Co., Beaver Falls, Pa.
 Marion Steam Shovel Co., Marion, Ohio.
 Sherwood, E. C., New York, N. Y.

Steam Specialties.
 Lunkenheimer Co., The Cincinnati, Ohio.
 Powell Co., Wm., Cincinnati, O.

Steam Traps.
 Jenkins Bros., New York, N. Y.

Steel.
 Carnegie Steel Co., Pittsburgh, Pa.
 Dietrich Bros., Baltimore, Md.
 Gulf States Steel Co., Birmingham, Ala.
 Hendrick Mfg. Co., Carbondale, Pa.
 Hoffman & Co., Inc., R. C., Baltimore, Md.
 Jones & Laughlin Steel Co., Pittsburgh, Pa.
 La Belle Iron Works, Steubenville, O.
 Lackawanna Steel Co., Lackawanna, N. Y.
 Lebanon Valley Iron & Steel Co., Lebanon, Pa.
 Portsmouth Steel Co., Portsmouth, Ohio.
 Republic Iron & Steel Co., Youngstown, O.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 Union Drawn Steel Co., Beaver Falls, Pa.
 Upon Nut Co., The, Cleveland, O.
 Wood Iron & Steel Co., Alan, Philadelphia, Pa.
 Youngstown Sheet & Tube Co., The Youngstown, O.

Steel (Tool).
 Boorne-Fuller Co., The, Cleveland, Ohio.
 McKenna Bros., Birmingham, Pa.
 Union Drawn Steel Co., Beaver Falls, Pa.

Steel (Vanadium.)
 Carnegie Steel Co., Pittsburgh, Pa.
 Union Drawn Steel Co., Beaver Falls, Pa.

Steel Buildings. (Designers, Builders.)
 Amer. Bridge Co., of New York, N. Y.
 Belmont Iron Works, Philadelphia, Pa.
 Champion Bridge Co., Wilmington, O.
 Chesapeake Iron Works, Baltimore, Md.
 Des Moines Bridge & Iron Co., Des Moines, Ia.
 Phoenix Iron Co., Philadelphia, Pa.
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
 Richmond Structural Steel Co., Richmond, Va.
 Schreiber & Sons Co., The L., Cincinnati, O.
 Sead Architectural Iron Works, Louisville, Ky.
 Turner, C. A. P., Minneapolis, Minn.
 Virginia Bridge & Iron Co., Roanoke, Va.

Steel Castings.
 Gracible Steel Castings Co., Lansdowne, Pa.
 Hoffman & Co., Inc., R. C., Baltimore, Md.
 Riverside Steel Casting Co., Newark, N. J.

Steel Plate Work.
 Casey-Hedges Co., Chattanooga, Tenn.
 Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
 Coatesville Boiler Works, Coatesville, Pa.
 Hoffman & Co., Inc., R. C., Baltimore, Md.
 Memphis Steel Construction Co., Memphis, Tenn.
 Phoenix Iron & Steel Co., Philadelphia, Pa.
 Struthers-Wells Co., Warren, Pa.

Steel Protector. (Concrete Curb, Steps, etc.)
 [See Curb Protector Steel.]

Steel Sheet Piling.
 Frank, J. E., Atlanta, Ga.
 Jones & Laughlin Steel Co., Pittsburgh, Pa.
 Lackawanna Steel Co., Lackawanna, N. Y.

Stencils.
 Baltimore Office Supply Co., Baltimore, Md.
 Stills. (Turpentine.)
 McMillan Bros., Jacksonville, Fla.

Stirrups. (Building.)
 Chesapeake Iron Works, Baltimore, Md.

Stock Certificates, Bonds and Seals.
 Baltimore Office Supply Co., Baltimore, Md.

Stock Room Racks, Bins, Etc.
 Merritt & Co., Camden, N. J.

Stokers. (Hand.)
 Huber Grate Bar & Stoking Co., Baltimore, Md.

Stokers. (Mechanical.)
 Babcock & Wilcox Co., New York, N. Y.
 Westinghouse Machine Co., Pittsburgh, Pa.

Stone. (Building.)
 Bedford Steam Stone Works, Bedford, Ind.
 Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Stone and Gravel Plants.
 Weller Mfg. Co., Chicago, Ill.

Storage Batteries.
 Eec. Storage Battery Co., The, Philadelphia, Pa.
 Westinghouse Machine Co., Pittsburgh, Pa.

Strapping Leather.
 Graton & Knight Mfg. Co., Worcester, Mass.

Structural Steel and Iron.
 Amer. Bridge Co., of New York, N. Y.
 Belmont Iron Works, Philadelphia, Pa.
 Boorne-Fuller Co., The, Cleveland, Ohio.
 Carnegie Steel Co., Pittsburgh, Pa.
 Champion Bridge Co., Wilmington, O.
 Chesapeake Iron Works, Baltimore, Md.
 Chicago Bridge & Iron Works, Chicago, Ill.
 Cincinnati Iron & Steel Co., Cincinnati, O.
 Des Moines Bridge & Iron Co., Des Moines, Ia.
 Dietrich Bros., Baltimore, Md.
 East St. Louis Bridge Co., East St. Louis, Ill.
 Easton Car & Construction Co., Easton, Pa.
 Grainger & Co., Louisville, Ky.
 Greenough's Sons Iron & Steel Co., Jos., St. Louis, Mo.
 Hoffman & Co., Inc., R. C., Baltimore, Md.
 Jones & Laughlin Steel Co., Pittsburgh, Pa.
 Lackawanna Steel Co., Lackawanna, N. Y.
 Oregon Bridge Co., Lebanon, Ohio.
 Memphis Steel Construction Co., Memphis, Tenn.
 Phoenix Iron Co., Philadelphia, Pa.
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
 Republic Iron & Steel Co., Youngstown, O.
 Richmond Structural Steel Co., Richmond, Va.
 Scaife & Sons Co., Wm. B., Pittsburgh, Pa.
 Schreiber & Sons Co., The L., Cincinnati, O.
 Sead Architectural Iron Works, Louisville, Ky.
 Southern Sheet & Tin Plate Co., Ashland, Ky.
 Savannah Steel Products Co., Savannah, Ga.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 Vincennes Bridge Co., Vincennes, Ind.
 Virginia Bridge & Iron Co., Roanoke, Va.

Stamp Pullers.
 Zimmerman Steel Co., Lone Tree, Iowa.

Sulphur.
 Union Sulphur Co., New York, N. Y.

Super-Heaters. (Steam.)
 Babcock & Wilcox Co., New York, N. Y.
 Power Specialty Co., New York, N. Y.

Surfacing Machines. (For Floors.)
 Wayrell Chappell & Co., Chicago, Ill.

Surveying Instruments.
 Weber & Co., Philadelphia, Pa.

Swinging Engines.
 Dake Engine Co., Grand Haven, Mich.

Switchboards, Switches, etc.
 Fort Wayne Electric Works, Fort Wayne, Ind.
 General Electric Co., Schenectady, N. Y.

Switches. [See Railroad Frogs and Switches.]

Switchstands.
 Weir Froz Co., Cincinnati, O.

Tackle Blocks. (For Wire or Manila Rope.)
 Broderick & Bascom Rope Co., St. Louis, Mo.

Talc and Soapstone Powders.
 Georgia Talc Co., Ashville, N. C.

Tanks. (Iron and Steel.)
 American Bridge Co., New York, N. Y.
 American Water Softener Co., Philadelphia, Pa.
 Caldwell Co., Inc., W. E., Louisville, Ky.
 Casey-Hedges Co., Chattanooga, Tenn.
 Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
 Chicago Bridge & Iron Works, Chicago, Ill.
 Coatesville Boiler Works, Coatesville, Pa.
 Cole Mfg. Co., R. D., Newnan, Ga.
 Des Moines Bridge & Iron Co., Des Moines, Ia.
 Dixie Culvert & Metal Co., Atlanta, Ga.
 Harry Bros. Co., Newport, Ky.
 Hartley Boiler Works, Montgomery, Ala.
 Hendricks Mfg. Co., Carbondale, Pa.
 Keefer Co., E., Williamsport, Pa.
 Keystone Boiler & Foundry Co., Columbia, Pa.
 Lombard Iron Works, Augusta, Ga.
 Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
 Memphis Steel Construction Co., Memphis, Tenn.
 New Orleans Roofing & Metal Wks., New Orleans, La.
 New York Central Iron Wks. Co., Hagerstown, Md.
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
 Schofield Iron Works, Macon, Ga.
 Struthers-Wells Co., Warren, Pa.
 Snyder Pump & Well Co., Inc., Richmond, Va.
 Tennessee Metal Culvert Co., Nashville, Tenn.
 Twin City Boiler Works, Bristol, Va.-Tenn.
 Virginia Bridge & Iron Co., Roanoke, Va.
 Walsh & Weidner Boiler Co., Chattanooga, Tenn.

Tanks. (Wood.)
 Caldwell Co., Inc., W. E., Louisville, Ky.
 Davis & Son, G. M., Palatka, Fla.
 Snyder Pump & Well Co., Inc., Richmond, Va.

Tapes. (Measuring.)
 Lufkin Rule Co., Saginaw, Mich.
 Starrett Co., L. S., Athol, Mass.

Telephones. (Supplies, Equipment.)
 Piedmont Electric Co., Asheville, N. C.
 Western Electric Co., New York, N. Y.

Telephone Service.
 American Telephone & Telegraph Co.

Terra-Cotta. (Ornamental.)
 Atlanta Terra-Cotta Co., Atlanta, Ga.
 Maryland Terra-Cotta Co., Baltimore, Md.
 Pomona Terra-Cotta Co., Pomona, N. C.
 Southern Building Material Co., Norfolk, Va.
 Stevens' Sons Co., H., Macon, Ga.

Threshers.
 Cardwell Machine Co., Richmond, Va.

Tiering Machines. (Portable.)
 Economy Engineering Co., Chicago, Ill.

Tramway. (Overhead.)
 Consolidated Tramway Co., New York, N. Y.
 Speede, G. O., Reading, Pa.

Tramways. (Portable.)
 Consolidated Tramway Co., New York, N. Y.

Tramway. (Wire Rope.)
 Broderick & Bascom Rope Co., St. Louis, Mo.
 Caldwell & Sons Co., H. W., Chicago, Ill.
 Consolidated Tramway Co., New York, N. Y.
 Link-Belt Co., Nicetown (Philadelphia), Pa.
 Waterbury Co., New York, N. Y.

Transformers.
 Crocker-Wheeler Co., Ampere, N. J.
 Translation.

Trench Excavator. [See Excavator (Trench).]

Trucks. (Dry Kiln.)
 Moore Dry Kiln Co., L., Jacksonville, Fla.

Trucks. (Elevating for Factories, etc.)
 National Scale Co., Chicopee Falls, Mass.

Trucks. (Motor, Gasoline.)
 White Co., The, Cleveland, O.

Trucks. (Platform, Freight, Mill, Factory, etc.)
 Bernstein Mfg. Co., Phila., Pa.
 Chase Fdry. & Mfg. Co., Columbus, O.

Trucks. (Storage Battery Auto.)
 Westinghouse Machine Co., Pittsburgh, Pa.

Trucks. (Storage Battery) [For Warehouses & Industrial Plants]
 Elwell Parker Electric Co., The, New York, N. Y.

Trust Companies. [See Bankers and Brokers.]

Tube Well Strainers.
 Cook Well Co., St. Louis, Mo.

Tubes. (Boiler.)
 Cincinnati Iron & Steel Co., Cincinnati, O.
 National Tube Co., Pittsburgh, Pa.

Tubing.
 La Belle Iron Works, Steubenville, O.
 National Tube Co., Pittsburgh, Pa.
 Youngstown Sheet & Tube Co., Youngstown, O.

Turbines. (Hydraulic.)
 Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 Davis Foundry & Machine Wks., Rome, Ga.
 Leffel & Co., James, Springfield, O.
 Poole Engineering & Mach. Co., Baltimore, Md.
 Salem Foundry & Machine Wks., Salem, Va.
 Smith Co., S. Morgan, York, Pa.

Turbines. (Steam.)
 Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 De Laval Steam Turbine Co., Trenton, N. J.
 Ft. Wayne Electric Works, Ft. Wayne, Ind.
 General Electric Co., Schenectady, N. Y.
 Sturtevant Co., H. F., Hyde Park, Boston, Mass.
 Terry Steam Turbine Co., Hartford, Conn.
 Western Electric Co., New York, N. Y.
 Westinghouse Machine Co., Pittsburgh, Pa.

Washers. (Ore and Phosphate.)
 Bailey-Latty Co., Charleston, S. C.
 Cameron & Barkley Co., Charleston, S. C.
 McLannan-Stone Mach. Co., Hollidaysburg, Pa.

Washers and Rivets. [See Bolts, Nuts, Rivets, Studs and Washers.]

Watchman's Clocks.
 Watchman's Clock & Supply Co., New York, N. Y.

Water Filters. (See Filters, Water, etc.)

Waterproofing. (For Brick Work.)
 Barrett Mfg. Co., Philadelphia, Pa.
 McCormick Waterproof Portland Cement Co., St. Louis, Mo.
 Standard Paint Co., The, New York, N. Y.

Waterproofing. (For Concrete.)
 Barrett Mfg. Co., Philadelphia, Pa.
 McCormick Waterproof Portland Cement Co., St. Louis, Mo.
 Standard Paint Co., The, New York, N. Y.

Water-Softening Apparatus. (Purifying.)
 American Water Softener Co., Philadelphia, Pa.
 International Filter Co., Chicago, Ill.
 N. Y. Cont. Jewell Filter Co., New York, N. Y.
 Tucker & Laxton, Charlotte, N. C.

Water-Wheels. [See Turbines. (Hydraulic).]

Water-Works Supplies and Appliances.
 American Cast Iron Pipe Co., Birmingham, Ala.
 American Pipe & Constr. Co., Philadelphia, Pa.
 Bourdon Copper & Brass Wks. Co., Cincinnati, O.
 Clark Co., H. W., Mattoon, Ill.
 Clow & Sons, James B., Chicago, Ill.
 Coldwell-Wilcox Co., Newburgh, N. Y.
 Columbian Iron Works, Chattanooga, Tenn.
 Donaldson Iron Co., Emaus, Pa.
 Giamorgan Pipe & Foundry Co., Lynchburg, Va.
 Keystone Pump & Well Engine Co., Beaver Falls, Pa.
 Layne & Bowler Co., Houston, Tex.
 Leadite Co., Inc., The, Philadelphia, Pa.
 Lynchburg Foundry Co., Lynchburg, Va.
 Massillon Iron & Steel Co., Massillon, Ohio.
 Pomona Terra-Cotta Co., Pomona, N. C.
 Salem Fdry. & Machine Works, Salem, Va.
 Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.
 Standard Spiral Pipe Works, Chicago, Ill.
 Stevens' Sons Co., H., Macon, Ga.
 U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
 Warren Foundry & Machine Co., New York, N. Y.
 Washburn Co., A. H., Charlotte, N. C.
 Wood & Co., R. D., Philadelphia, Pa.

Welding. (Oxy-Acetylene Process.)
 Frost-O-Lite Co., Inc., The, Indianapolis, Ind.

Welding Plants. (Oxy-Acetylene.)
 Milburn Co., Alex. N., Baltimore, Md.

Welding Apparatus. (Oxy-Acetylene Process.)
 Frost-O-Lite Co., Inc., The, Indianapolis, Ind.

Welding Supplies.
 Frost-O-Lite Co., Inc., The, Indianapolis, Ind.

Well Contractors. (Oil, Artesian, etc.)
 Columbia Pump & Well Co., Washington, D. C.
 Cook Well Co., The, St. Louis, Mo.
 Hughes Specialty Well Drill Co., Charleston, S. C.
 Lee Bros. & Greer, Spartanburg, S. C.
 Stohoff Bros., Flemington, N. J.
 Snyder Pump & Well Co., Inc., Richmond, Va.

Well Tools and Supplies.
 Cook Well Co., The, St. Louis, Mo.
 Keystone Pump & Well Engine Co., Beaver Falls, Pa.
 Williams Bros., Rhine, N. Y.

Wheels and Axles.
 Electric Wheel Co., Quincy, Ill.
 Oliver Mfg. Co., W. J., Knoxville, Tenn.

Wheelbarrows and Carts.
 Sterling Wheelbarrow Co., Milwaukee, Wis.
 Syracuse Chilled Plow Co., Syracuse, N. Y.

Wheels. (Steel and Steel Tired.)
 Carnegie Steel Co., Pittsburgh, Pa.

Window Frames and Sash. (Fireproof.)
 Detroit Steel Products Co., Detroit, Mich.
 Edwards Mfg. Co., The, Cincinnati, O.
 Mueschl-Edwards Corrugating Co., Covington, Ky.
 Trussed Concrete Steel Co., Youngstown, O.
 Voigtman & Co., Chicago, Ill.

Window Guards. (Wire.) [See Wire Goods.]

Winomills.
 Caldwell Co., Inc., W. E., Louisville, Ky.
 Columbia Pump & Well Co., Washington, D. C.

Wire. (Barbed Wire, etc.)
 Roebbing's Son Co., John A., Trenton, N. J.
 Youngstown Sheet & Tube Co., Youngstown, O.

Wire. (Galvanized and Annealed.)
 Gulf States Steel Co., Birmingham, Ala.

Wire. (Galvanized Telephone.)
 Gulf States Steel Co., Birmingham, Ala.

Wire. (Plain Steel, Hoop, etc.)
 Gulf States Steel Co., Birmingham, Ala.

Wire. (Square.)
 American Steel & Wire Co., Chicago, Ill.
 Safety Insulated Wire & Cable Co., New York, N. Y.

Wire Cloth. (Iron, Steel, Brass, etc.)
 Caldwell & Sons Co., The, H. W., Chicago, Ill.
 Meyers Mfg. Co., The Fred J., Hamilton, O.
 New Jersey Wire Cloth Co., Trenton, N. J.

Wire Goods.
 Botte Iron & Wire Wks., J. E., Detroit, Mich.
 Cincinnati Mfg. Co., Cincinnati, O.
 Dow Wire & Iron Works, Louisville, Ky.
 Dufur & Co., Baltimore, Md.
 Dufur, Baggett & Co., Baltimore, Md.
 Meyers Mfg. Co., The Fred J., Hamilton, O.
 New Jersey Wire Cloth Co., Trenton, N. J.

Wire Netting.
 American Steel & Wire Co., Chicago, Ill.
 New Jersey Wire Cloth Co., Trenton, N. J.

Wire Rope.
 Broderick & Bascom Rope Co., St. Louis, Mo.
 Roebbing's Son Co., John A., Trenton, N. J.
 Waterbury Co., New York, N. Y.
 Youngstown Sheet & Tube Co., Youngstown, O.

Wire Rope Clips.
 American Hook & Derrick Co., St. Paul, Minn.
 American Steel & Wire Co., Chicago, Ill.
 Broderick & Bascom Rope Co., St. Louis, Mo.

Wires and Cables. (Insulated.)
 American Steel & Wire Co., Chicago, Ill.
 Safety Insulated Wire & Cable Co., New York, N. Y.

Wood Blocks. (For Printing and Factory Floors.)
 U. S. Wood Preserving Co., New York, N. Y.

Wood Distillation.
 Struthers-Wells Co., Warren, Pa.

Wood Pipe. (For Water, etc.)
 Wyckoff & Son Co., A., Elmira, N. Y.

Wood. (Preservative.)
 Barrett Mfg. Co., Phila., Pa.

Woodworking Machinery.
 Gibbee Mach. Co., Inc., Columbia, S. C.
 Kline, Lewis T., Alpena, Mich.
 Lane Mfg. Co., Montpelier, Vt.
 Sidney Tool Co., The, Sidney, Ohio.
 Smith Machine Co., H. B., Smithville, N. J.

Yarn. (Tarred Seal.)
 Columbian Rope Co., Auburn, N. Y.
 Plymouth Cordage Co., North Plymouth, Mass.

Important Information For Advertisers in Manufacturers Record

Publication day—Every Thursday.
 Advertising copy not requiring proof must reach us one week in advance of publication day.
 When proof is required, two weeks in advance.
 Width of column, 2½ inches; length, 13 inches.
 Four columns to page.

TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain rule for all spaces less than a full page.
 Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

Tile (Drain)
 Gray Concrete Co., Thomsville, N. C.
 Oconee Brick & Tile Co., Milledgeville, Ga.

Tile (Interior)
 Amer. Enam. Brick & Tile Co., New York, N. Y.
 F & F Tile Co., Birmingham, Ala.

Tile. (Mantel and Promenade.)
 Hood Brick Co., B. Mifflin, Atlanta, Ga.

Tile. (Rubber.)
 Goodyear Tire & Rubber Co., Akron, O.

Tile (Structural)
 Oconee Brick & Tile Co., Milledgeville, Ga.

Timbers. (Crescoted.)
 American Crescote Works, New Orleans, La.
 Republic Crescote Co., Indianapolis, Ind.

Tin and Terne Plates.
 American Sheet & Tin Plate Co., Pittsburgh, Pa.

Tires. (Rubber.)
 Goodyear Tire & Rubber Co., Akron, O.

Tobacco Machinery.
 Buckeye Iron & Brass Works, Dayton, O.
 Cardwell Machine Co., Richmond, Va.

Tools. (Mechanical.)
 American Die & Tool Co., Reading, Pa.
 Holland Mfg. Co., Erie, Pa.
 Morse Twist Drill & Mch. Co., New Bedford, Mass.

Tools. (Pneumatic.)
 Amer. Compressor & Pump Co., Baltimore, Md.
 Chicago Pneumatic Tool Co., Chicago, Ill.
 Independent Pneumatic Tool Co., Chicago, Ill.

Tools. (Tinners')
 Danzer Metal Works, Hagerstown, Md.

Torches.
 Wall Mfg. Supply Co., F., Allegheny, Pa.

Towers. (Electric Transmission.)
 American Bridge Co., of New York, N. Y.
 Scaife & Sons Co., Wm. B., Pittsburgh, Pa.

Towers. (Steel and Wood.)
 Caldwell Co., Inc., W. E., Louisville, Ky.
 Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
 Chicago Bridge & Iron Works, Chicago, Ill.
 Cole Mfg. Co., R. D., Newnan, Ga.
 Columbia Pump & Well Co., Washington, D. C.
 Des Moines Bridge & Iron Co., Des Moines, Ia.
 Memphis Steel Const. Co., Memphis, Tenn.
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Track Material. (Steam & Industrial Railroads.)
 Conley Froz & Switch Co., Memphis, Tenn.

Traction Engines.
 Fairbanks-Morse & Co., Atlanta, Ga.
 Heer Engine Co., Portsmouth, O.
 Holt Mfg. Co., The, Peoria, Ill.
 Huber Mfg. Co., The, Marion, O.

Turn Buckles.
 Broderick & Bascom Rope Co., St. Louis, Mo.

Turntables.
 American Bridge Co., New York, N. Y.
 Easton Car & Construction Co., Easton, Pa.
 Virginia Bridge & Iron Co., Roanoke, Va.

Twine.
 Columbian Rope Co., Auburn, N. Y.
 Plymouth Cordage Co., North Plymouth, Mass.

Unions.
 Dart Mfg. Co., E. M., Providence, R. I.
 National Tube Co., Pittsburgh, Pa.

Vacuum Cleaning Apparatus.
 King Co., F. E., Norfolk, Va.
 United Electric Co., The, Canton, O.

Valves.
 Bourdon Copper & Brass Wks. Co., Cincinnati, O.
 Columbian Iron Works, Chattanooga, Tenn.
 Frick Co., The, Waynesboro, Pa.
 Giamorgan Pipe & Foundry Co., Lynchburg, Va.
 Jenkins Bros., New York, N. Y.
 Lunkenheimer Co., The, Cincinnati, O.
 National Tube Co., Pittsburgh, Pa.
 Powell Co., Wm., Cincinnati, O.
 Pittsburgh Valve Fdry. & Const. Co., Pittsburgh, Pa.

Valve Mfg. Co., York, Pa.

Valve Boxes.
 Clark Co., H. W., Mattoon, Ill.

Varnish.
 Berry Bros., Detroit, Mich.
 Murphy Varnish Co., Newark, N. J.

Veneer Machines.
 Titus, E. E., Petersburg, Va.

Ventilators.
 Mueschl-Edwards Corrugating Co., Covington, Ky.

Ventilating Apparatus. (Engineers' and Contractors')
 Buffalo Forge Co., Buffalo, N. Y.
 Sturtevant Co., H. F., Hyde Park, Boston, Mass.

Vises.
 Holland Mfg. Co., Erie, Pa.

Wagons. (Dump.)
 Troy Wagon Works Co., The, Troy, O.
 Western Wheeled Scraper Co., Aurora, Ill.

Wainscoting. (Tile.)
 Northcross Mantel Co., W. J., Memphis, Tenn.

Wall Coping.
 Southern Sewer Pipe Co., Birmingham, Ala.

Wall Plugs. (Galvanized.)
 Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Wall Ties.
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